

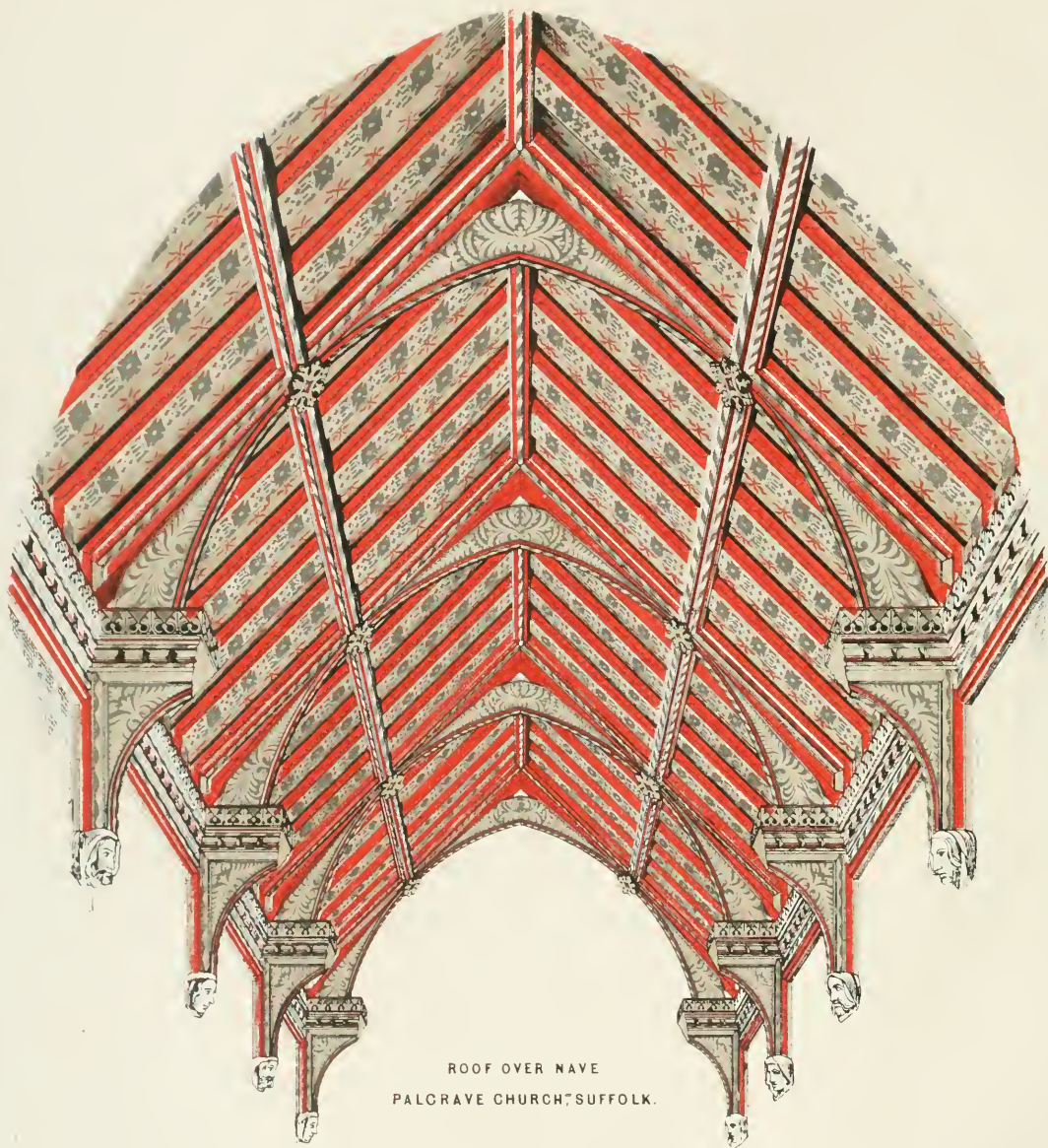




Walter Charles Lord Northbourne.



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ROOF OVER NAVE
PALGRAVE CHURCH, SUFFOLK.

THE
OPEN TIMBER ROOFS
OF
THE MIDDLE AGES.

ILLUSTRATED BY PERSPECTIVE AND WORKING DRAWINGS OF SOME OF THE
BEST VARIETIES

OF
Church Roofs;
WITH DESCRIPTIVE LETTER-PRESS.

BY
RAPHAEL AND J. ARTHUR BRANDON,
Architects,
AUTHORS OF "PARISH CHURCHES," "AN ANALYSIS OF GOTHICK ARCHITECTURE," ETC., ETC.



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P R E F A C E .



THE conviction that, of the various branches of Ecclesiastical Architecture, the Open Timber Roofs of our ancient Churches had received the smallest portion of attention, induced us to undertake its investigation ; most of the other parts of a sacred edifice present an inviting field to the artist and amateur, and we have to acknowledge many beautiful and valuable treatises from their hands : the subject of the present work, however, affords little such attraction, and, indeed, appears particularly appertaining to the province of the Architect, from whom alone could be expected that research into the constructive features which necessarily claim the devotion of much time and application.

The urgency of a close inquiry will be at once manifest, when it is considered how valuable these excellent models must be to us, not so much for servile imitation, as to show the spirit with which the Mediæval Architects always sought to give to necessary construction the most beautiful forms ; how far they succeeded is seen in their universally admired works : let us imitate their example in our new churches, where vaulting is generally impossible, and rarely even desirable.

In the pursuance of our task, we have visited many of our remaining specimens, and have selected for illustration those roofs which appeared most worthy of remark, as well for the excellence of their framing and design, as for affording specimens of the various methods of construction ; of these we have

furnished geometrical and perspective drawings from careful admeasurements, in every instance taken by ourselves: we have also accompanied them with such remarks and comments as we think may be serviceable, the more fully to explain them.

The favourable reception bestowed upon our former publications has, if possible, stimulated us to more zeal in carrying out this work than even the love of the gratifying task itself would have caused us to devote to it; we acknowledge a debt of gratitude to the Archæological and Architectural world, and trust that the present volume will show how highly we appreciate their approbation.

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THE OPEN TIMBER ROOFS

OF THE

MIDDLE AGES.

INTRODUCTION.



THE historian, whose task it may be to chronicle the events of the nineteenth century, and to trace the progress of intellect, the improvements and revolutions in learning and science of which this country has been the cradle, will probably find few that are more gratifying, or which are destined to exercise a more beneficial influence on mankind, than the important change which has happily occurred in the matter of Ecclesiastical Architecture.

Doubtless he will have to record incidents of a more startling nature, and social and political revolutions of more universal interest; but the page of history, though it may recount all these, and be further charged with the wonders in art, the giant strides in science, and the miracles which the genius of man has performed, will yet possess no fairer characters than those which narrate the glorious improvement in Church Architecture, and the greatly better ordering of God's Temples.

And yet, vast though the improvement in this respect may have been, we are still far from having attained perfection in the construction of our Churches. It is a somewhat hackneyed observation, that though much has been done, yet much remains to be done. Much indeed has been done, much written and said on this interesting subject; the good that has been wrought by the revival of a purer taste in Architecture, and a recurrence to better principles, is but the harbinger of the good yet to be achieved. Architecture has at length roused itself from its slumber; or, to speak more correctly, has burst from the thralldom in which the vitiated taste of Puritanism had held it; it has risen, Phoenix-like from its ashes, to accomplish once more that beauty and

perfection which made our Churches such worthy "monuments of love divine," such "glorious works of fine intelligence."

Amidst the many beauties that these Sacred Edifices present to the admirers of Mediæval Architecture, none are more striking than the taste and skill exhibited in the formation of the Roofs; and, indeed, there is no portion of a building, whether Ecclesiastical or Secular, requiring more skill in its construction, or that is more susceptible of ornament and decoration. Many of our Churches and Ancient Halls still attest the truth of this opinion by the evidence they afford of the matchless skill of the carpenter's art.

Mankind was yet in the early stage of barbarism when the necessity of some place of shelter from the inclemency of the weather must have been first experienced; the origin, therefore, of covered habitations is lost in the remoteness of time.

The shelter which the requirement of the savage led him to construct must have been rude indeed. When ready-formed abodes, as caverns or the hollows of trees, failed him, it is probable that his ingenuity devised no better refuge than such as he could derive from the boughs of trees, torn from and piled round the parent trunk and surmounted with the skins of animals or caves, or with a covering of moss and twigs, coated with slime or clay.

From this rude origin it might be curious to trace the gradual development of a perfect roof, and to note the transition from this Sylvan abode to the Wigwam of the North American Indian, or the more finished tenement of the South Sea Islander, and so proceed until we arrive at the elaborate constructions of more civilized and enlightened races; but the limits of this work, being confined principally to the Structures of the Middle Ages, preclude any speculation of this nature, however tempting and interesting it might prove to the Archæologist.

The simplest and earliest description of Roof was, doubtless, that formed by two rafters pitching against each other; it must, however, have soon become apparent that this mode was open to a serious objection, namely, that the rafters had a tendency to spread and thrust outwards the walls on which they rested; this led to the introduction of the tie-beam, which, in conjunction with the rafters, gives us that simple form of Roof which has been handed down to us in the earliest records we possess of any coverings to Buildings, and which, with some modifications, is still in very general use amongst us; and it must be admitted, that, in those cases where the Roof is intercepted from view, as, for instance, when concealed by a vault, no better construction can be adopted.

Of this nature were, probably, the ancient Temple Roofs of Greece and Rome,

where massive beams would be quite in unison with the rest of the Architecture, the principal and characteristic features of which were rectilinear. Such features may have been adapted to the Temples devoted to the cold and philosophic worship of Classic Paganism, but would be inharmonious with the genius of Mediæval Architecture, which we consider typical of the elevating spirit of Christianity. The Churches built by our forefathers bear the impress of this spirit; they were built for the glory of God, not merely for the convenience of man: we may, to borrow the words of an elegant modern writer on these subjects, "trace in every work of their hands a refined piety and a fervent faith, which delights us the more we unfold the pages of antiquity and learn to decypher the hidden lore which is to be read within the walls of every ancient Church."

Who can, in fact, regard the wrecks that remain to us of these works, without feeling that

"They dreamt not of a perishable home who thus could build."

In them every thing tended to lift one's thoughts to things above. The eye was led upwards to the arched Roof, and the spirit followed in prayer; every thing conspired

"To rouse the heart and lead the will
By a bright ladder to the world above."

The absence of examples of handsome Open Timber Roofs, during the early period of Gothic Architecture, may perhaps be accounted for by the monopoly which was exercised in the art of building by a few individuals, known as the Free Masons. This body of men, who so excelled in the working of stone, and to whose craft posterity is so greatly indebted, appear to have despised wood, and to have discarded it from their works as an inferior material; nor can we wonder at this in men who built (as they did) for all time, when we call to mind the frequent conflagrations that occurred in the early history of our Cathedrals, the devastating element frequently destroying in a few brief hours the work that had been brought to completion only by years of skill and labour. Admonished by the warnings of experience, the Free Masons would, doubtless, have recourse to wood only when compelled to its use by the want of stone; and, certainly, we have no reason to regret this contempt for so perishable a material, since to that we are indebted for the exquisitely beautiful groined vaults which adorn most of our Cathedrals, and very many of our larger Churches, and which, while acting as a safeguard in case of fire, are at the same time one of the greatest adornments of our Sacred Edifices.*

* It may not be irrelevant to the subject which this work professes to illustrate, to allude in this place

So wonderfully, indeed, are some of these executed, that it is a matter of astonishment to many persons how the vaults are supported; and, to show that this feeling is not confined to the unprofessional and uninitiated observer, it may not be out of place to mention the answer given by one of our most celebrated modern architects, Sir Christopher Wren, who, when asked if he could construct a similar vault to that over Henry the Seventh's Chapel in Westminster Abbey Church, replied that he could, "if he only knew where to lay the first stone."

The present work, it is hardly necessary to state, is not brought forward with a view of superseding stone groining, the merits of which the Author highly estimates, and which is most excellent in its appropriate place; but the advantages of such a vault, though so admirably adapted, on account of its beauty, its safety, and its durability, to Cathedrals or large Churches, could in smaller designs only be obtained at the expense of internal altitude; inasmuch, as the whole height of the roof, from the wall-plates, must in that case be sacrificed; added to this, the additional substance of walling required by the lateral pressure of the vaulting would entail an outlay that might be more advantageously expended in other portions of the building.

And, setting aside these objections, it may be questioned whether, in a Parish Church of moderate dimensions an Open Timber Roof is not more pleasing and more appropriate than a groined stone vault; for even though its simpler and more easily understood construction be not one of its chief recommendations, yet surely the effect of such a Roof, with its bold receding arches, its massive and richly moulded and carved timbers, the intricate tracery of its spandrels, its effective and profusely ornamented cornice, and its exquisitely carved bosses, must be felt by the most indifferent spectator: to the enthusiast in the noble science it must realize all he can conceive of beauty and sublimity. When, too, in addition to these splendours, the worshipper's eye lingers on the other beauties of our ancient shrines, on the host of angels which appear to

to a generally received opinion respecting the Free Masons' method of building. We have hitherto been led to believe that they worked more by oral directions than by the aid of plans, and it has been asserted that they carried on their works without drawings, and almost without instructions. So extraordinary and intuitive a knowledge of their craft might well excite a little scepticism amongst the less gifted builders of the present day; for, the more closely we examine the various details of their Structures (particularly groining, window-tracery, and other elaborate works) the more must we be convinced that the greatest forethought and consideration were devoted to every portion of them. This conviction is strengthened by the monument of the two Architects, of St. Owen Church, Rouen, in the Incised slab laid down to their memory, in which they are represented holding a pair of compasses, and what we may very naturally infer to be working drawings of some parts of the Building. This slab is illustrated in the work of the Rev. C. Boutell on Monumental Brasses. London, G. Bell.

hover above his head, bearing either sacred emblems, or labels with scriptural texts emblazoned thereon, and seeming with their outspread wings to support the whole roof, whilst their imaged presence speaks to him of the brighter glories of another world, his heart must be cold indeed that derives no inspiration from such a scene, no holy impulse from such solemn magnificence.

And here it may be well to remark, that most of our ancient Church roofs bear traces of rich colouring; some indeed, though very few in number, are to be met with that have altogether escaped the pollution of white-wash;* and these, though their colours are dimmed by the hand of time, and perhaps much more by neglect, bear testimony to the splendid appearance which our Churches must have presented when glowing from the pavement to the summit with brilliant colours and gilding.

Among the accompanying plates two coloured roofs are given, illustrating different methods in which colour was introduced; and the Author found that many of the others which are represented in this work bore indications of having been similarly ornamented. In fact, it may be considered as an almost invariable rule, that where the windows of a Church present any remains of stained glass, other portions of the Edifice have likewise been enriched with colouring.

This style of embellishment, which dates from the remotest antiquity, appears to have been held in deservedly high estimation by the Mediæval Architects, nearly every portion of whose Structures admitted of and profited by its application; and there is scarcely a Church of their times that does not bear witness to this favourite style of decoration. We see it in the mosaic pavement, the frescoed walls, and the brilliant hues of the stained-glass windows; in the rood-loft and screen, rich in gold and gorgeous colouring, the lower panels adorned with paintings of the Apostles and Saints; in the sepulchral monuments, the pulpit, and lectern, and the font and cover, and finally in the roof itself, the crowning ornament of the whole Edifice.

If the vestiges that remain of the artist's skill are less abundant than the antiquary and lover of our National Architecture could wish, the loss is attributable to the hand of the spoiler rather than to any defect in the workmanship. Though the influence of time and decay has not been altogether unfelt, yet the wanton spoliation by the Church's foes has been still more fatal in its effects. The most glorious monuments of our Fathers' piety, the fairest of God's altars, were those which seem to have been specially marked

*To such an extent has this mania for white-wash been carried, that in one Church which the Author visited he found not only the walls and roof, and a beautiful rood-screen, defaced with it; but that, moreover, two fine old helmets, and the remains of some rich stained glass in the east window of the Chancel, had fallen victims to the plasterer's brush.

out for wanton sacrilege. The deeds that were done in the phrenzy of sectarian hate need not be recounted here, for the task has been performed by many and abler pens; suffice it, that if some few of our Ecclesiastical monuments escaped the mutilation that befel so many, and if our Cathedral and Church roofs were the portions of the building that suffered least, the cause may be assigned to their comparative inaccessibility, and perhaps also to a fear entertained by the destroyers that the work of demolition might bring with it a summary retribution by affecting the stability of the roof, and thus burying them and their iniquities in one grave.

But to return to the subject of coloured roofs. These vary considerably in their treatment, some being painted in every part, whilst in others the colour is confined to the mouldings and carvings. In flat roofs the panels were frequently painted blue, and powdered with gold stars. In the Clopton Chantry, for instance, in Long Melford Church, Suffolk, the spaces between the rafters are thus ornamented; the rafters themselves in striking contrast being painted red, and exhibiting on their soffits scrolls bearing the prayerful ejaculation **Thū mercy And gramercy**. Between the feet of the rafters, in the centre of the crest-ornament of the cornice, are shields emblazoned with the arms of the Clopton family; the cornice, which in this instance is continued on all four sides of the Chapel, following the rake of the rafters, is enriched with a running ornament of carved foliage; round this is entwined a scroll, on which again prayers are inscribed. The beads in the ridge and cornice are coloured red, with a gilt leaf twisted round them spirally.* This was the usual mode of colouring the beads in all woodwork, the colours of course varying, but always giving the idea of a band of one colour wound round a rod of a different colour; in these portions of the woodwork black and white mostly predominate. The flat aisle roofs of St. John's, Madders Market, Norwich, have paintings of angels on the panels, the ground being diapered with the letters **Thū** encircled by a wreath.

The artists from whom some of these roofs emanated have succeeded in producing a rich and pleasing effect by means of but few colours; the one for example over the nave of Palgrave Church, Suffolk (Plates 21 and 22), is produced merely with black, white, and red; the effect nevertheless is extremely good. The roofs over the north and south transepts of Ely Cathedral are treated somewhat similarly.

* For coloured plates of these roofs the reader is referred to the excellent work by J. K. Colling, entitled "Gothick Ornaments." The same work contains a plate of a panel from the east end of the south aisle roof of St. Mary's Church, Bury St. Edmund's, Suffolk. Here a short prayer is inscribed on a label crossing the panel diagonally, the ground being diapered with the initials J. B., encircled by a collar of SS., alternating with gold stars. In the centre of the latter small mirrors were introduced to render them more resplendent, these are connected by a small running pattern of foliage, forming quarries, in which are inscribed the above-mentioned initials.

Shields, emblazoned with armorial bearings, frequently occur in the spandrels and other parts of roofs; sometimes in the centre of richly carved bosses, sometimes by way of finish to the hammer-beams, as at West Stow Church, Suffolk; or as a termination to the wall braces, as in the Chancel of Freslingfield Church, Suffolk.*

The Author has endeavoured, in the foregoing introductory observations, to convey some faint idea of the ancient—alas that we should have to say departed glories of our Churches. They who perchance have made a pilgrimage amongst the stately Cathedrals of our cities, and the less pretending but still most interesting shrines of our villages, whilst admiring the beauties that are left, cannot but sorrow for those that have passed away. Happily the rage for destruction and the blighting spirit of indifference are now succeeded by a zeal for restoration. If we cannot recall the memorials of our ancestors' faith, we can strive at least to atone for the sacrilegious deeds of their descendants. And surely we indulge no idle or chimerical hope in believing that the time is approaching when we may once more see "the wished-for temples rise" in all their former excellence; and that the traveller, who in days to come may wander through our land, will rejoice not only in the abundance but the loveliness of our Churches.

* See Brandon's "Parish Churches." London, D. Bogue.

DESCRIPTION OF TERMS.

It has been considered advisable, in the descriptions that accompany this work, to adopt the commonly received nomenclature of the various portions of the roofs, and this not so much on account of its peculiar appropriateness, as to avoid the confusion that might arise from the introduction of new terms. It may not however be superfluous to give the following brief enumeration of those that will be employed.

Bay.—The space between two trusses.

Braces.—Curved pieces of timber tenoned into the main timbers of the roof, and serving to stiffen and tie them together; there are five different positions for the braces: First, that connecting the hammer-beam and wall-piece together; Secondly, that connecting the collar, principal, and strut; Thirdly, that connecting the ridge with the king-post; Fourthly, that connecting the purlin and principal; and, Fifthly, that connecting the cornice and wall-pieces. These generally take their names from the horizontal pieces of timber into which they are tenoned; thus, we have the hammer-beam brace, the collar-brace, the ridge brace, the purlin brace, and the cornice brace.

Collar-beam.—An horizontal piece of timber placed high up in the truss, and serving the double purpose of a stiffener to the principals and a tie to prevent their spreading outwards.

Cornice.—In early roofs the inner wall-plate, which was sometimes moulded; afterwards this feature was greatly enlarged and enriched, and became of main importance in the roofs.

Hammer-beam.—An horizontal piece of timber lying on the wall-plates, at right angles with the wall into which the principal rafter and strut are tenoned; in some roofs, two ranges of hammer-beams occur, in which case the upper range differs from the lower, inasmuch, that instead of the principals being tenoned into them, the reverse is the case.

King-post.—The strut which rests on the collar-beam, and into which the upper ends of the principals are sometimes framed.

Purlin.—A longitudinal piece of timber extending from truss to truss, and tenoned into the principal rafters, serving as a support for the common rafter.

Ridge.—A piece of timber similar to and framed as last, forming the apex of the roof.

Strut.—An upright piece of timber tenoned into the hammer-beam and principal, and thus forming a triangular foot for the truss to rest upon the wall. When a strut rests on the collar-beam it is called a king-post.

Tie-beam.—An horizontal piece of timber extending from wall to wall, into which the ends of the principals were framed, and which served, as its name indicates, as a tie both to them and the side walls.

Truss.—Several pieces of timber framed together, so that their own weight and that which they support shall fall as perpendicularly as possible upon the walls. There are two principal kind of trusses used in roofs; the one where every pair of rafters is trussed together (roofs of this description are sometimes called trussed rafter-roofs, and sometimes single-framed roofs); the other, in contradistinction to these, termed double-framed roofs, where the rafters rest upon a framing formed of purlins tenoned into the main-trusses, which are usually formed of a pair of strong rafters called principals, hammer-beams, collars, wall-pieces, struts, and braces.

Wall-piece.—An upright piece of timber tenoned into the hammer-beam or principal, and morticed to receive one side of the brace, which was also tenoned at its upper end into the hammer-beam; the use of this was to counteract any tendency the truss might have to spread outwards.

Wall-plates.—Longitudinal pieces of timber laid on the top of the walls to receive the beams; sometimes the wall-plates were doubled framed, that is to say, composed of two plates framed together so as to lie over the whole thickness of the wall.

FIRST DIVISION;

OR,

TIE-BEAM ROOFS.



IN treating of the roofs of the Middle Ages, it may be well to class them in four main divisions, namely,—Roofs with tie-beams; Trussed-rafter, or single-framed roofs; Roofs framed with hammer-beams and braces; and Roofs constructed with collars and braces, or with the latter only.

Of the first,—as we have before mentioned the earliest kind,—it may be observed that they were never entirely discarded by the Mediæval Architects; they are to be met with in Norman, Early English, Decorated, and Perpendicular buildings. In the first-named, they were probably the only description of Roof in use; roofs belonging unquestionably to the Norman period are not often met with, nor did they, if we are to judge from the specimens that remain, exhibit much of beauty or science in their construction; and consequently we have not thought it necessary to give any drawings of them, as they offer nothing worthy of imitation, and can only be considered interesting in an antiquarian point of view.*

The tie-beam was sometimes used in roofs of the Middle Ages quite independently of the other timbers, being simply laid across the walls, and in all likelihood pinned down to the wall-plates. Instances of this may be seen in Clymping Church, Sussex; the Church of St. Mary the Virgin, Wigenhall, Norfolk; and in the South Chapel of Bredon Church, Worcestershire;† and many were the expedients to which the Builders subsequently had recourse, in order to retain and make it an ornamental feature in the design. At Southfleet Church, Kent, the tie-beams are beautifully moulded; cases occur, nevertheless, in which they are left quite plain, as in the Chancel of Northfleet Church, in the same county, where they are simple tie-beams in almost their natural roughness, while the roof itself, which is

* An illustration of the original Norman roof over the Chancel of Adel Church, Yorkshire, is given in a work entitled, "Churches of Yorkshire," p. 31. Leeds, T. W. Green.

† See Brandon's "Parish Churches." London, D. Bogue.

one of the trussed-rafter kind, is panelled and has moulded ribs with carved bosses at the intersections.

Various methods were resorted to, at different times, to endeavour to make this feature harmonize well with the rest of the Architecture; as the height or pitch of the roof varied, so naturally would the treatment of the other parts.* In roofs of low pitch, which appear to have been in use at a very early period, the beam was made to bear the whole weight of the roof, as is the case in the one over the larger South Aisle of St. Martin's Church, Leicester,—hereafter illustrated and described. A somewhat similar roof, though rather steeper, occurs over the South Chapel of St. Nicholas' Church, Kiddington, Oxfordshire; in this instance a massive beam spans the Chapel, its underside being well moulded and connected with the wall-pieces by moulded curved braces forming a very obtusely pointed arch; the purlins rest directly on the beam, and the ridge is also supported on it by a strut or king-post, and further strengthened by short curved braces; the space between the top of the beam and the ridge is filled up, so as to give it the appearance of a solid triangular shaped beam.† A similarly constructed roof, but much later in style, covers the nave of Islip Church, Northamptonshire.‡ The naves of Raunds Church, and Higham Ferrars Church, Northamptonshire, have good roofs of this description; the latter is clearly of Decorated date; the tie-beam is much cambered, and forms an arch with the curved braces, which are framed into it and spring from small shafts with caps and braces; the cornice and principal timbers are simply but effectively moulded.§ An interesting roof of this date exists over the nave of Wymington Church, Bedfordshire, where the tie-beam braces, besides being curved, are foliated.

In the Churches of the Middle Ages, a perfectly horizontal tie-beam is of extremely rare occurrence: where a tie-beam is used, we almost invariably find it cambered, as are

* Ancient roofs were for the most part acutely pitched, though this was by no means their invariable characteristic; an angle of 90° was perhaps the ordinary elevation of Norman Roofs; and the Early English, though generally acutely pointed, are nevertheless rarely found of an equilateral pitch or angle of 60° . Indeed, in this and the succeeding style, we meet with some roofs so remarkably low as to rival the flattest specimens of Perpendicular. Such is that over the Early English Church at Warmington, in Northamptonshire; the interesting example from Polebrook, in the same county, is also very low. The Decorated roof over the larger South Aisle of St. Martin's Church, Leicester, has a span of twenty-one feet, with a rise of only four. The roof over Wymington Church, in Bedfordshire, is another specimen of a very low pitch; notwithstanding that the Perpendicular Architects gradually lowered the pitch of their roofs, yet in the Counties of Norfolk and Suffolk many beautiful examples remain of noble elevation.

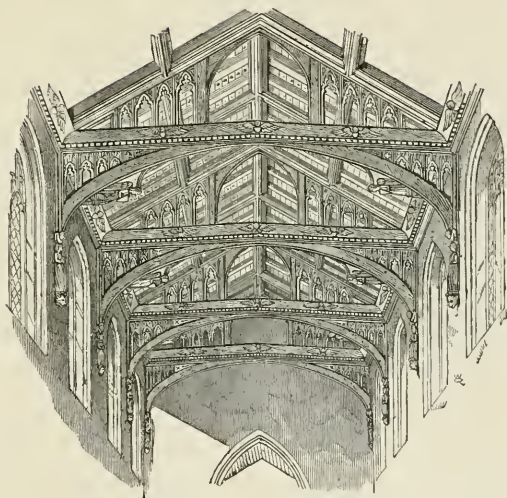
† See a "Guide to the Architectural Antiquities in the neighbourhood of Oxford," p. 126. Oxford, J. H. Parker.

‡ See Brandon's "Parish Churches," p. 61. London, D. Bogue.

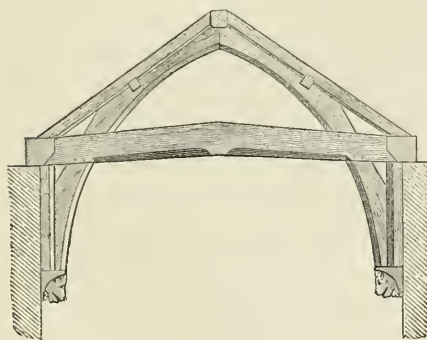
§ See "Northamptonshire Churches." Oxford, J. H. Parker.

also the collar-beams; even the hammer-beams will be generally found, on close inspection, to incline upwards from the walls. The disagreeable effect of a straight tie-beam was often further counteracted, by having curved braces framed from its underside connecting it with the wall-pieces, thus forming an arched support for it, as at Outwell Church, Norfolk.*

In roofs of higher pitch the builders still endeavoured, with varied success as to effect, to retain the arched shape in conjunction with the tie-beams; a curious specimen exists at the Church of St. Mary the Virgin, Pulham, Norfolk, where the beam literally divides the arch in two, and a similar instance is met



ROOF OVER THE NAVE OF OUTWELL CHURCH.



ROOF OVER NAVE OF MORTON CHURCH, LINCOLNSHIRE.

with over the nave of Morton Church, Lincolnshire; the effect however is anything but agreeable or satisfactory. At Cransley Church, Northamptonshire, in the nave roof, the sweep of the curved braces, which is broken rather abruptly by the tie-beam, is continued by the rake of the rafter, thus forming a four-centered arch, intersected as in the two preceding cases by the beam,† None of these expedients, however, are at all to be compared with the effect of an unbroken arch, an excellent specimen of which is to be seen over the nave of Adderbury Church, Oxfordshire;‡ where arched tie-beam braces span the nave,

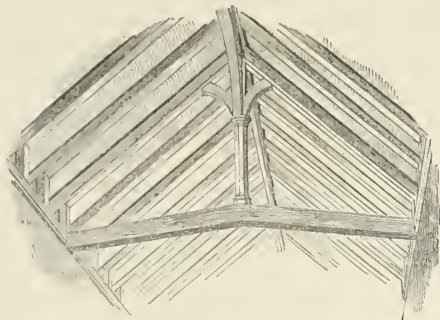
* See also, Hingham Church, Norfolk; Islip and Cransley Churches, Northamptonshire; Wymington Church, Bedfordshire; and Burton Lazars' Church, Leicestershire.

† See Brandon's "Parish Churches."

‡ See Bloxham's excellent work on "Gothick Architecture," pp. 208, 209. London, D. Bogue.

as do foliated ridge-braces each bay of the roof, springing from the tie-beams and framed into the ridge; the different timbers of this roof are nicely moulded and cusped.

In many tie-beam roofs the form of the arch was entirely omitted, as in the accom-

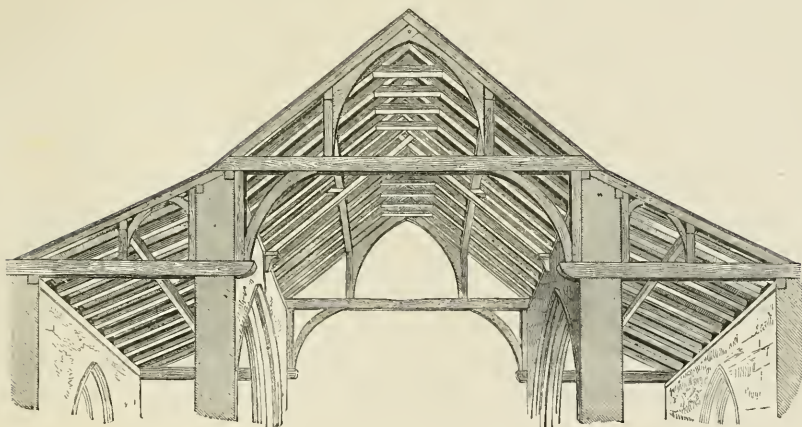


ROOF OVER NAVE OF SWARDESTONE CHURCH.

ppanying illustration from Swardestone Church, Norfolk. This variety of roof is by no means uncommon in the counties of Kent and Sussex, and it must be confessed that the effect produced by its small king-post with its cap and base and the curved braces springing therefrom to the principals and ridge, is certainly deserving of admiration. Mr. Bloxham, in his "Manual of Gothic Architecture," makes mention of

an interesting variety of this description of roof, and his record is the more valuable as the Church in which it occurs is no longer used for the sacred purpose to which it was originally devoted: it now stands in the middle of a farm-yard, and is used as a barn! Mr. Bloxham describes the roof as follows:—"In the little desecrated Church at Horton near Canterbury, is an open wooden roof of a construction different to those which have been described. It is divided into bays by horizontal tie-beams, with the under parts moulded, resting on wall-plates, and on vertical wall-pieces supported by corbels, with a curved brace between each wall-piece and the tie-beam. From the centre of each tie-beam rises an octagonal-shaped king-post, up to about two-thirds in height of the valley of the roof, where it supports a longitudinal rib or beam; from the principals of the roof, at about two-fifths in height, spring plain braces, which cross diagonally, just above the longitudinal rib, and rest on the opposite principal; above these there is neither collar-beam nor apparent ridge-piece; from four sides of the king-post spring curved braces, both longitudinal and lateral, the former support the longitudinal rib, the latter the braces which cross above it. The roof is high pitched."

The roofs over North Walsham Church, Norfolk, are constructed in a very secure manner, the ties of the aisle roof pass through the walls, and form corbels for the wall-pieces of the nave-roof; the entire workmanship is extremely rude, but the principle is good. A feature is here exhibited that became almost universal in roofs of late date; namely, the intermediate truss; its introduction must no doubt have originally been dictated by necessity, as in the present instance the bay or space between the main trusses (which are placed over the piers) would have had too great length and bearing for the purlins, and the crown



ROOF OVER NAVE AND AISLES OF NORTH WALSHAM CHURCH.

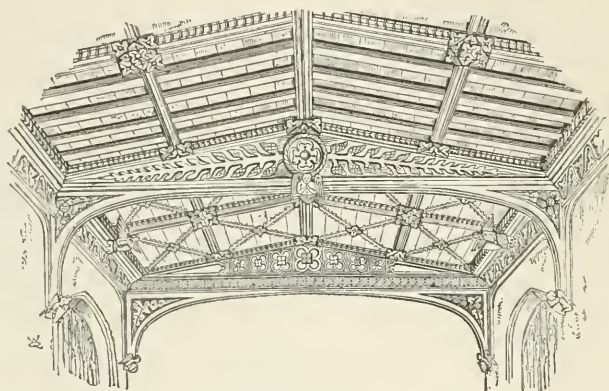
of the arch prevented the use of an additional main truss; the builders were obliged in consequence to have recourse to some other plan, in order to give additional support to the purlins, and at the same time avoid interference with the arches. In the roof in question this has been very effectually accomplished by the adoption of double rafters on each side, strongly united and framed together; the common rafters are further strengthened by the introduction of a collar between each pair.

In hammer-beam roofs of a later period, as will be seen in the following plates, the difficulty of two great a space between the main trusses was sometimes overcome by introducing intermediate trusses without hammer-beams, as in the roof over the nave of Little Welnethom Church, Suffolk (Plate 23), and sometimes, as in the example from Trunch Church, Norfolk (Plates 18, 19), by retaining the hammer-beams in the intermediate trusses, but, diminishing the depth of the braces and wall-pieces beneath them. At times, as in Worstead Church, Norfolk,* (where two clearstory windows occur over each arch of the nave, leaving a pier over the crown of the arch of equal size to those over the pillars), the main trusses are placed over each pier of the clearstory. At other times even on occasions where no necessity existed for them, the intermediate trusses without hammer-beams were introduced, as instanced in that splendid roof over the nave of St. Mary's Church, Bury St. Edmund's, Suffolk; this was probably done from a desire of producing a pleasing variety in the whole design, and avoiding the risk of a monotonous effect, which a long succession of hammer-beams might possibly create; but whatever the motive may have

* See Brandon's "Parish Churches."

been which induced the Architect to introduce them in this roof, whether caprice or necessity, the effect is most satisfactory; and it may be safely affirmed that this magnificent specimen of Mediæval Architecture is scarcely to be surpassed by any other in the land. The span of this roof is twenty-six feet, and the rise about twelve; the angels on the hammer-beams and in the cornice are exquisitely carved.*

As the Perpendicular period drew towards a close, tie-beam roofs of very low pitch were of general occurrence; in fact, they were frequently almost flat, with no more rise to throw off the wet than could be obtained by the camber of the beams. These roofs were oftentimes profusely ornamented, as in that over the North Chapel of Wellingborough Church, Northamptonshire. In this instance the Eastern bay, as was very frequently the case, is panelled, while the others are left open to the rafters. The roof over the north aisle of Rushden Church, Northamptonshire, may be instanced as a particularly beautiful example of this period.†



ROOF OVER NORTH CHAPEL, WELLINGBOROUGH CHURCH.

* For an Illustration of this roof, see T. T. Bury's work on the "Remains of Ecclesiastical Architecture." London, J. Weale.

† See "Northamptonshire Churches." Oxford, J. H. Parker.

SECOND DIVISION;

OR,

TRUSSED-RAFTER ROOFS.



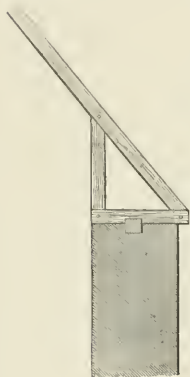
THE next in succession, as we have classed them, to the tie-beam roof, that we discover amongst the roofs of the Middle Ages, is one with diagonal ties; of which there is an example in the porch of Stuston Church, Suffolk*—a form of roof in all likelihood chosen for the purpose of gaining headway; and having once been had recourse to, its superiority, both as regards construction and general appearance, over the tie-beam, could not but lead to its being preferred and substituted for the latter.

In roofs of a wide span, each pair of rafters had a collar, and was also further stiffened by braces, crossing at times above the collar, and at others tenoned into its underside. The roof over the nave of Ely Cathedral furnishes a good example of this kind of covering;† here, as we imagine to be the case in all other roofs of this description, each separate pair of rafters is trussed, so that, viewed from below, it presents somewhat the appearance of an arched ceiling; the soffit of the arch (if it may be so designated) of this roof is pentagonal—the two lower inclined sides being formed by the lower part of the rafters themselves; the two next, by braces passing obliquely from one rafter to its opposite neighbour; and the upper or horizontal side, by the collar, which intersects the braces; all these timbers are halved and pinned together with wooden pins.

* See "Analysis of Gothic Architecture," Section II. Woodwork, Plate 24.

† This is probably the greatest width over which a roof this kind has been constructed, though they are sometimes met with in parish Churches of considerable span, as over the nave of Reedham Church, Norfolk, which is thirty-one feet wide. This Church consists simply of Chancel, nave, and west tower.

In roofs of this character the rafters generally extended to the outside of the walls and formed the eaves and, consequently, the walls being of great thickness, and never carried up higher than the wall plates, a considerable space intervened on the inside of the Church, between the top of the wall and the underside of the rafter, which, if allowed to pitch upon a plate laying on or near the outer edge of the wall, would have but a very insecure hold: instead of this, the builders of old made use of the entire thickness of the wall, by filling up this space with upright pieces of timber lineable with the wall (called struts), which were framed and pinned into the underside of the rafters, and connecting these struts with the foot of each rafter by a horizontal piece of timber, into which each was framed, so as to assume the shape of a triangle whose base was equal to the thickness of the wall, and by thus forming a wide foot for the truss to rest upon they contrived to obtain an excellent hold, and so obviated in a great measure the danger of the roof spreading thus; and this in our opinion, as will be hereafter illustrated, gave



the idea of the beautiful hammer-beam roofs that still adorn many of our sacred and other edifices. Several of these roofs are boarded underneath, and form a covered or polygonal ceiling, divided at the angles by mouldings and traversed by others, thus forming panels with carved bosses at the intersections. These roofs have frequently a single plate only, placed midway in the wall, the feet of the rafters being halved upon it, though sometimes they are found with both an internal and external plate; or, as at Heckington Church, in the south porch, with a central plate and an internal one, the latter being moulded and forming a slightly projecting cornice.

In the early examples of this particular kind of roof the tie-beam was still retained, as may be seen in the specimen over the Chancel of Sandridge Church, near St. Albans, Herts, in which a moulded cornice projects from the wall, and is carried on notch heads, and into which the tie-beams ornamented with similar mouldings are framed. There are two tie-beams in the length of this Chancel, with about twelve rafters between each.

No great length of time however elapsed before we find the tie-beam altogether omitted, when the construction of simply-trussed rafters became and continued a very favourite style of roofing with the Early English and Decorated Architects; the trusses were then generally placed from about one foot two inches to one foot eight inches asunder.

More numerous examples of this kind of roof are extant than of any other; but they

have, in too many instances, been concealed by lathed and plastered ceiling. There is every reason for believing that, even in their original state, they were occasionally boarded; though



ROOF OVER THE CHANCEL OF SOLIHUL CHURCH.

we may doubt if they gained much by the addition: certain it is that, for simple grandeur and picturesque effect, a plain trussed-rafter roof of good pitch cannot easily be surpassed.*

Sometimes the form of the arch was perfected by the employment of curved braces affixed to the underside of the trusses, as in the annexed example, from Solihul Church, Warwickshire.

These arched ceilings are often met with in Somersetshire, where they are generally formed into panels, by ribs running horizontally with carved bosses at the intersections; between these ribs the panels are now mostly plastered, † as at Crowcombe Church, Somersetshire.

* Trussed-rafter roofs, though usually of high pitch, are nevertheless sometimes met with very flat, as is the case with the roof over the wide nave of Melliss Church, in the County of Suffolk.

† See Brandon's "Parish Churches," p. 79.

THIRD DIVISION;

OR

HAMMER-BEAM ROOFS.



FTER trussed-rafter roofs, the next kind of which we have to treat is that formed with hammer-beams, struts, collars, and braces; of which there are several varieties, all comprised under the general definition of Hammer-beam Roofs.

These roofs have hitherto been usually represented as lacking a portion of the tie-beam, as if in fact it had been partly cut away: an idea which we cannot but consider erroneous, and we shall endeavour to show that they owed their origin, as we have already stated, to the peculiar method in which the feet of the rafters were framed in trussed-rafter roofs, and were not in any way indebted for their formation to those roofs constructed with tie-beams.

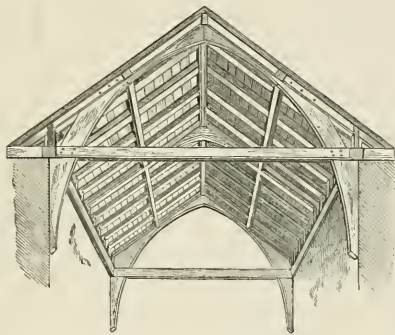
There is no other resemblance between hammer-beam and tie-beam roofs than is to be derived from the circumstance of both of them being what are termed double-framed roofs; that is to say, that the common rafters are supported by an inner framework, composed of a pair of strong rafters called principals, into which the purlins are framed and further strengthened by means of braces, wall-pieces, collars, and either hammer or tie-beams.

Beyond this, we imagine there to exist no more connexion between a hammer-beam and a tie-beam roof than there is between a tie-beam and a trussed-rafter roof: we may assert, indeed, that there is still less; for we find tie-beams used in conjunction with the earliest trussed-rafter roofs, as if in fact the builders had been afraid at first to dispense with so useful an ally. This is not the case in hammer-beam roofs, the earliest known specimen of which, the roof over Westminster Hall, is constructed without that member. This magnificent specimen, said to have been completed in the year 1399, which is characterised by such boldness, and what, when its span is considered, may be almost termed sublimity of design, is too familiar to the generality of readers to need illustration here; suffice it to say, that it differs in construction from most other roofs of the kind, in the

introduction of a large main arch of timber springing from the bottom of the wall-pieces, and reaching to the underside of the collar-beams. The hammer-beams and struts run through this, and their braces complete the form of a trefoiled arch.

We cannot however bring ourselves to believe that so exquisite an example as the one in question could be the earliest roof of the kind executed, such perfection is not to be expected in a first attempt; it is however the earliest of which we possess any record, and though but a solitary instance, we may fairly adduce it as satisfactory evidence of the correctness of our supposition.

To illustrate further our hypothesis of the origin of hammer-beam roofs, we subjoin the accompanying illustration of the nave roof over St. Mary the Virgin's Church, Pulham, Norfolk.



ROOF OVER NAVE OF ST. MARY THE VIRGIN'S, PULHAM, NORFOLK.



ROOF OVER NAVE OF TUNSTEAD CHURCH, NORFOLK.

Here the consequence of cutting away the tie-beams, at the point where they intersect the curved braces, would be the formation of a simply arched roof, and this form does actually occur at Tunstead Church, in the same county. So exact is the resemblance between these roofs, that we may without any great stretch of imagination, easily conceive them to have been the work of the same builder; that over Tunstead being naturally a modification, albeit an improved one, of the Pulham roof; and as much finer in effect as it is bolder in construction.

This roof is undoubtedly of the Decorated period, and consequently earlier than any of the hammer-beam roofs, which do not occur until quite the end of the fourteenth century, and indeed, were not in general use, until late in the fifteenth.*

* Early roofs of this description differ from the later ones in the thickness of their curved braces. In the former they are generally of the same thickness as the principals; whereas, in the latter, they are seldom more than three or four inches thick.

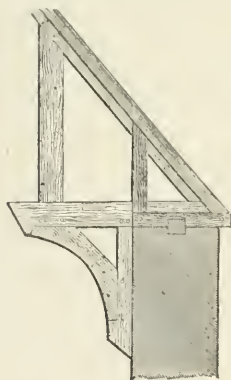
Having once cast off the restrictions imposed upon them by the tie-beam, and by which the genius of the artist was in a measure fettered, the Architects of the Middle Ages appear immediately to have profited by their newly acquired freedom, and to have pushed their advantage to the furthest limit.

They saw that their favourite form, the Pointed arch, could be safely employed in their roofs without the accompaniment of the unsightly tie-beam, and at once they carried, to a perfection hitherto unattained, those splendid roofs, the pride of our oak-bearing land, in allusion to which one of our Poets so justly observes,

“Those forest oaks of Druid memory
Shall long survive to shelter the abode
Of genuine faith.”

In this peculiar feature of Architecture England may be pronounced unrivalled; for though other countries may equal, or even excel her in the magnitude and external beauty of their Churches, and though their Sacred Edifices may have passed comparatively unscathed through the ordeal of fanaticism, and have felt less sensibly the touch of “Time’s decaying finger;” nevertheless, whatever superiority they may claim, there is scarcely a single Church or other building on the Continent of Europe which can boast of such specimens of timber roofs as are to be met with in almost every county of our own land.

Having, we think adduced sufficient proof of the tie-beam having been discarded, both in single and double framed roofs, before the introduction of hammer-beams, we shall now proceed to describe a roof of that description.



The accompanying illustration shows the foot of a rafter as framed in a trussed-rafter roof; and likewise the foot of a truss of a hammer-beam roof. The similarity of construction in these two specimens is evident: the timbers are only increased in size, and the triangular foot widened by bringing the strut further into the building and increasing the length of the horizontal connecting piece, or, as it has been generally designated, the hammer beam; into the underside of which a wall-piece is tenoned, and the strain upon the hammer-beam is diminished and the weight of the roof carried lower down upon the wall by means of a curved brace, which connects the wall-piece and hammer-beam together.

This construction completely obviates all danger of the roof opening at its base and slipping on the wall, indeed it is almost impossible for these roofs to spread, so

securely are they tied together and at the same time stiffened by the curved braces by which all the principal timbers are connected.

The collar-beam is still retained, but instead of the cross timbers thin curved braces are used, connecting the collar, principals, and struts together, into which they are tenoned, forming an arch which not only serves to enhance the beauty of the roof, but is of main importance in binding the whole together.

In the counties of Norfolk and Suffolk many roofs are to be met with having two ranges of hammer-beams, as at St. Margaret's Church, Ipswich; Weatherden, Grundisburgh,* Rattlesden, Woolpit, Tostock, and Bacton Churches in Suffolk; and the exquisite roof over the nave of Knapton Church in Norfolk, which still retains its original colouring and the greater part of its elaborately carved enrichments. (See Plates 36, 37, and 38.)

The object of this second range of hammer-beams, with their braces and struts, was further to stiffen the principals and bring what strain there might be on them to the lower range, and thence directly on to the wall; the effect produced by these two series of hammer-beams is more intricate, but generally less pleasing than that of a single hammer-beam roof: when they occur the roof is usually of a lower pitch than when one set of hammer-beams is used.

Among the many varieties of this description of roof we may notice, first, those as described with hammer-beams, collars, and struts, connected together with curved braces, as at Little Welnetham Church (See Plate 15): the roofs over the Chancel of Ixworth Church, Suffolk, and over the nave of Freslingfield, in the same county, are of this description. Secondly, those in which the collar-beam is omitted and the curved braces are carried up almost to the ridge and framed at the apex of the arch into a wedge-shaped strut into which the principals are also tenoned, as over the north aisle of Wymondham Church, and over the naves of Trunch Church, Norfolk (see Plates 18 and 19), and St. Stevens' Church, Norwich (see Plates 32 and 33); of this description are also the roofs over the North and South Creak Churches, Norfolk, and Blakney and Worsted Churches in the same county. Thirdly, we meet with hammer-beam roofs having collar-beams and no struts, as over the naves of Capel St. Mary's Church, Suffolk (see Plates 16 and 17), St. Mary-le-Stoke, Ipswich, and Rougham Church near Bury St. Edmunds: in these two latter the hammer-beams are beautifully carved into figures of angels. And lastly, we meet with hammer-beam roofs without either collar-beams or struts, as in the one over the nave of Palgrave Church, Suffolk (see Plates 21 and 22); in this instance, the arched brace is formed of three pieces of timber about three inches in thickness, one on either side tenoned into the hammer-beam and principal, and reaching up as far as the purlin, the centre piece, forming the apex of the arch, being tenoned into each principal and itself acting as a brace, and at the same time to a certain extent as a collar-

* See Brandon's "Analysis," Section II. Woodwork, Plates 26 and 27. London, D. Bogue.

beam. In roofs with complete collar-beams the arched braces were usually made in four pieces, two uniting the hammer-beams with the lower half of the principals, and the other two connecting the upper halves with the collar-beam.

We have thus briefly enumerated the most usual varieties of this beautiful description of roof; many other minor differences are however to be met with; for instance, the intermediate trusses already alluded to at page 14: in roofs of large span the employment of a large main arch of timber, as in the roof over Westminster Hall; a similar arrangement occurs in the Hall roof at Beddington, Surrey.

At St. Peter's Maneroft Church, Norwich, a peculiarity exists deserving of notice: the cornice, instead of being placed, as is ordinarily the case, against the wall, is brought forward to the extremity of the hammer-beams, and wooden arched ribs spring from the supports of the wall-pieces to the underside thereof, forming a sort of fan groining round the hammer-beam braces; this however, though, as we have said, worthy of notice, is by no means to be looked upon as an example to be followed, being an imitation of the method of building in stone, and therefore to be regarded almost in the light of a deception, which of course no well-regulated mind would condescend to practise;* besides, different materials, such as stone and wood, are susceptible of, and in fact call for different modes of treatment in their construction—and the Mediæval Architects thoroughly understood this, as is attested in their works; for though we do occasionally meet with wooden groined vaults, yet they furnish the exception and not the rule, nor was any deception or trickery ever had recourse to in order to make them look like stone: they were either left quite plain, or else enriched with polychromatic decorations, as at St. Alban's Abbey Church, Herts. The builders of old seem to have delighted in ascertaining the capabilities of the various materials they had at hand, and then working them out to the greatest advantage.

We have still one other variety of hammer-beam to notice; and that is, one without either wall-piece or brace, an instance of which occurs over the south aisle of Outwell

* We cannot here refrain from censuring the practice which some time back had obtained among Architects, and which we believe to have done more harm than anything else to the cause of Church Architecture; the practice we refer to is that of imitating good building materials with others of an inferior description: such as running mouldings, or casting ornaments in plaster, coloured and jointed to represent stone; or again, constructing lathed and plastered groined vaults; graining and varnishing deal to look like oak, and many other subterfuges of the same kind, all of which are to be condemned as quite unworthy the spirit of Christian Architecture. Our Church is for all time; surely then her places of worship should be built of the most durable and best materials that can be obtained. Happily, our Church Building Societies are fully impressed with the importance of this, and will not vote grants where any sham material or construction is had recourse to.

Church, Norfolk (see Plate 23); here the projection of the hammer-beam is very slight, and has no support whatever underneath it; the ends, which project into the aisle are carved into figures of angels, which appear to support the whole weight of the roof; this feature is met with again in the nave roof of the same Church, in the intermediate trusses which occur over each clearstory window; this roof, a sketch of which is given at page 13, is a tie-beam roof with arched braces beneath, having intermediate trusses, as above-mentioned, supported on these pseudo hammer-beams; the finding this variety of hammer-beam, in conjunction with the tie-beam in the same roof, does not at all militate against what we advanced at page 20, viz., that the earliest hammer-beam roofs were constructed without any tie-beams, for both these roofs are very late in style, and must have been constructed, not only after the introduction of hammer-beam roofs, but after they had been brought to the greatest perfection.

Hammer-beam roofs over aisles are not very common: a beautiful one covers the north aisle of Wymondham Church, Norfolk, illustrated in our "Analysis of Gothick Architecture;" in this case, the spaces between the main trusses are boarded under the common rafters and formed into panels, with richly cusped tracery and elaborately carved bosses at the intersection of the moulded ribs.

In Hingham Church, Norfolk, a hammer-beam lean-to roof* covers the north and south aisles; this is the only instance of the kind the Author has ever met with: in this example the hammer-beam is perfectly formed, with its wall-piece and braces; above it has no strut, but a curved brace connects it with the principal rafter; the mouldings of the hammer-beams are continued round along the wall, and form a cornice plate for the common rafters, which are finished with the usual plain short struts stubbed into this cornice; these struts are almost invariably to be met with in roofs of good pitch.

* See Brandon's "Parish Churches." London, D. Bogue.

FOURTH DIVISION;

OR,

COLLAR-BRACED ROOFS.



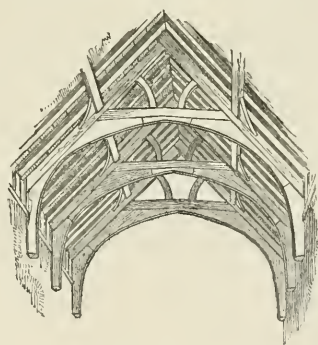
IF the last division of roofs we have to treat upon, and which we have called collar-braced roofs, we have given four illustrations: these include also roofs braced together without collar-beams, the braces simply connecting the wall-pieces and principals together; this style of roof is a natural simplification of the hammer-beam roofs, among which we have already described some varieties without collar-beams; others without struts; and one without either; having found that these members could be dispensed with safely, the next transition, that of omitting the hammer-beam itself, followed very soon; indeed, in either of the before-mentioned cases it plays a very subordinate part—take, for instance, the roof over the nave of Capel St. Mary's Church, Suffolk (Plates 16 and 17); the hammer-beam, with its brace and wall-piece, form little more than a continuation of the collar-beam brace; nor is it of much more importance in the roof over Palgrave Church (Plates 21 and 22); at Brinton (Plates 24 and 25) it is boldly omitted; the wall-piece is tenoned into the underside of the principal rafter, the foot of which is likewise connected with it, by means of the usual horizontal piece of timber, which might, to distinguish it, be called a wall-beam; the arched braces, which in this roof terminate somewhat abruptly, effectually bind and hold the main timbers together: it is worthy of remark, that this roof, in appearance and general construction, bears a striking resemblance to a form of roof that had been executed at least a century earlier, we mean the roof over Tunstead Church (illustrated in page 21), the most important difference being, that in the latter the curved braces are of the same thickness as, and appear to form part of, the principal rafters; whereas, in the former, they are not more than four inches thick, while the principal rafters themselves are about ten; of course, this observation applies only to the general appearance of the two roofs, that

at Brinton being more ornamental, especially in its cornice and cornice-braces, as well as being more elaborately finished.

The next roof illustrated, that over the nave of St. Mary Magdalen's Church, Pulham, Norfolk (Plates 26 and 27), is one of the most beautiful of the kind that we have met with; the shape of the arch and the general design of this roof are far more pleasing than in the preceding example; all the timbers are well moulded, and the cornice and purlins fringed with a cresting of strawberry leaves, the former being further enriched with a double range of figures of angels and flowers alternating, and their positions in the second range counter-changed. The eastern bay of this roof is much more highly ornamented than the other parts, the mouldings of the various timbers are more elaborate, and the spaces between the principal rafters are boarded under the common rafters and subdivided into panels with the emblems of the Evangelists painted thereon; the whole of the roof still retains traces of the colours and gilding with which it was once resplendent, the distinction between the eastern bay and the remainder of the roof being still kept up in the treatment of the colouring; the former was coloured all over, whereas the colour was only applied to the ornamental parts of the latter, such as the carvings and the more important mouldings, leaving the general ground-work the natural colour of the wood; and this was the most usual way of introducing colour in roofs, it being of rare occurrence to find the wood entirely concealed, as at Knapton and Palgrave.

The roof over the Chancel of St. Mary's Church, at Leicester, is similar in general design to the Pulham roof, but of a much ruder construction; this roof, though a double-framed one, has no ridge-piece, the rafters being simply crossed and halved, and pinned together, as in an ordinary trussed-rafter roof.

Over the nave of Starston Church, Norfolk, is a roof of good plain construction, the main timbers being simply connected together by curved braces (see Plates 28 and 29); there is no collar, or, as it has sometimes been called, wind-beam, probably from its being generally placed about midway in the length of the rafters, where it would most effectually counteract the strain of the wind acting on the slopes of the roof: this specimen shows the method of framing the braces at the apex of the arch, in roofs where the collar-beam was omitted, which is as follows; a strut hangs down from the summit of the principal rafters, which were framed and pinned into it so as to prevent



ROOF OVER CHANCEL OF ST. MARY'S CHURCH, LEICESTER

the possibility of its dropping ; sometimes this strut was made in the shape of a wedge, as at Trunch Church (Plates 18 and 19) ; mortices are cut in the four sides of this strut, into two of which the main arch braces are tenoned, and the two other mortices receive the ends of the arched ridge-braces ; by this arrangement it is almost impossible for the roof either to spread outwards, or to rack from east to west, as sometimes happened with trussed-rafter roofs, where there existed no lateral connection between the timbers.

A curious example of an arched braced roof without collar-beam, and yet where the braces do not meet at the summit of the principal rafters, exists over the nave and aisles of Old Basing Church, Hampshire ; in this case the curved braces meet together after describing a four-centered arch, and the ends then crossing continue, with an inverted curve up to the principal rafters into which they are tenoned ; the braces are almost as thick as the principal rafters : these roofs have a good effect, they have two rows of purlins with purlin braces ; the span is about fifteen feet.

The curved braces in all the foregoing descriptions of roofs, besides binding the different timbers together, serve two other highly important purposes ; in the first place, that of conveying the thrust or strain of the roof lower down on the walls, where of course they can offer a greater resistance to any lateral pressure ; and, in the next place, serving as a great steadiment to the walls ; this latter being by far the most important part of their services, for they are to be met with in roofs where no lateral thrust occurs, such as most tie-beam roofs, or the flat roofs which cover the late perpendicular clearstories of many of our Churches : in neither of these cases is there any danger to be apprehended from an outward thrust of the roofs, and though the arched braces act as a great support to the massive beams, yet in conjunction with them they form a most effectual counterfort to the walls themselves—a very necessary provision when we contemplate the lofty clearstories, so perforated as to present almost the appearance of one long window opening, and call to mind that these are not supported on a solid foundation, but nicely poised on slender shafts placed at wide intervals apart.

ON AISLE ROOFS.



OUR observations, with one exception, have hitherto had reference to gabled roofs ; as the majority, however, of aisle roofs are of the description termed lean-to, a few words concerning them may not be out of place.

The earliest aisle roofs were probably formed by merely continuing the rafters of the nave roof, as at Long Stanton Church, Cambridgeshire (Plate 2) : the necessity however of introducing light into the Church above the aisle roofs led to the introduction of clearstories—a great gain to the Churches, both as regards the internal lightness and the appearance externally ; this necessitated a separate construction for the aisle roofs, which were generally of a rather flatter pitch than those of the nave, so as not to have more walling than necessary over the piers and arches, and at the same time turn the external wall of the aisles to as much account as possible for light.

The formation of these roofs is very simple, and may be described as usually consisting of strong timbers, answering the purpose of principal rafters in gable roofs, resting at each end on plates—the lower one simply resting on the external wall, and the upper one either supported on corbels projecting from the nave wall or inserted therein ; wall-pieces are tenoned into the upper and lower extremities of the principals, and curved braces springing from the feet of these meet in the centre of the principal, as at New Walsingham Church, Norfolk (Plate 40), and Haslingfield Church, Cambridgeshire (Plate 43) ; or else, gradually dying into its soffit, form a flat-shaped arch, as at Bramford Church and Ixworth Church, Suffolk (Plates 41 and 42) ; a purlin is usually framed into these principals, and on this the common rafters are supported. When the principals were too far apart for the bearing of the purlins intermediate trusses were introduced, as in nave roofs, the mouldings of which generally mitred with those of the purlins.

The timbers of all the aisle roofs illustrated in the accompanying plates, five in number, are carefully moulded ; those of the Haslingfield roof (Plate 43), the earliest of them, particularly so ; and the carved bosses which cover the intersections are very

boldly and well executed : at Ixworth Church (Plate 42), even the common rafters are moulded ; the aisle roofs being so much nearer the eye of the spectator than those in other positions of the Church, will perhaps account for the greater care bestowed on the details thereof. The lower cornices were generally the most enriched ; those to each of the accompanying examples are very good, especially to the Bramford roof, which, in addition, has carved spandrels supported on canopies, with well-executed statues under them.

The north aisle of Mattishall Church, Norfolk, is covered with a good roof, figured in Plate 39 ; the eastern bay is here shown, exhibiting what we have already alluded to relative to that portion of most roofs, being distinguished with a greater degree of decoration, both as regards colour and workmanship.

When aisle roofs were gabled, they were seldom of high pitch, especially when there was a clearstory to the nave ; this is easily accounted for by the reason that had they been of an acute pitch they would have risen above and darkened the clear-story windows : but besides this, externally the effect produced would not have been so pleasing with a steep-gabled aisle roof as with a low one, for the former would interfere with and detract from the importance of the nave roof. When there was no clearstory, sometimes the gables of both nave and aisles were made of an equal angle, the nave roof being rather wider and consequently higher than those over the aisles, as is the case over Old Basing Church, Hampshire : this Church consists of chancel and nave with north and south aisles to both, and a central tower ; this last feature greatly helps the general composition, which, without it, would be very monotonous.

Except however in cases of the aisles being very wide, it is rarely that we find them covered with gabled roofs ; it may be remarked that, when they do occur, it is more often over the south aisle of a Church than over the north : it is very difficult to assign any other reason for this than that the south aisle generally was of more importance than was the north ; the porch was most often on this side, and when there was but one entrance it was usually placed on the south, as were also the Churchyard well or brook, the lytch gate, the dark spreading yew trees ; and, finally, that most important feature—the Cross—that holy symbol formerly always considered indispensable to mark the last resting-place of the Christian pilgrim.

CONCLUSION.



HOUGH Church roofs have engrossed the subjects for the illustrations of this work we cannot conclude our remarks without calling attention to, in many cases, the more magnificent coverings of some of our Palatial edifices, and the equally interesting hall roofs that occur throughout the land.

Among the most important roofs of our old Palaces may be mentioned those of Westminster, Hampton, and Eltham—the two former are well known, and we are happy to say well preserved ; the latter, an equally interesting and beautiful example, is fast falling into decay for want of the care and attention that would be given to a common barn to save it from ruin : it is now several years since we visited the old Palace, and the timbers of the roof were then strutted up from below with old scaffold-poles, and altogether this once magnificent apartment presented a sad wreck ; unless some fostering hand is stretched out to save it, it must soon cease to exist. “An Historical and Descriptive Account of the Royal Palace at Eltham,” was published in 1828, by Mr. Buckler, in which, speaking of the hall, he says, “The roof, now the most perfect, and always the most splendid part of the interior, has suffered its proportion of injury ; many of its most delicate enrichments have been gradually removed : but its chief ornaments are the constituent members, and not the minute carved work ; these remain entire, and compose a design which merits, and continues to receive, as much praise as any existing work of antiquity. The principal beams of the roof repose on the summit of the walls, which are crowned with a broad and boldly projecting cornice of numerous mouldings. Every one of the frames thus formed, amounting to seven, includes a wide-spreading arch, within and intersected with which are the handsome arches composing the essential features of the design, and the side segments, resting on brackets which terminate on stone corbels most beautifully formed. These segments, joined to horizontal beams attached to the side cornice, themselves assume the form, and answer the purpose of brackets, since they sustain the main arches, whose elegance is much increased by the

pendent corbels by which they are upheld." The internal dimensions of this hall are 101 feet 6 inches by 36 feet.

In some of these halls we meet with trussed-rafter roofs, having collar-beams and braces, as at Penshurst, illustrated in the third volume of "Nash's Mansions;" in this instance the collar-beam divides the roof into two parts, the upper one forming a distinct roof of itself; the purlins, which are framed into the collar-beams, are placed between two and three feet within the rafters, and are connected with them by means of horizontal and upright pieces, in a similar manner to the way we have described the feet of the rafters in most roofs to be formed. At Ightham, Kent, a trussed-rafter roof covers the hall of the Moat-house; * this is constructed with collar-beams, three in number, and under the central one is a massive well-moulded stone arch springing from wall to wall, evidently for the purpose of a steadiment both to the walls and roof. Other good roofs occur at Beddington Hall, Surrey; South Wraxhall, Wilts; Athelhampton Hall, Dorsetshire; the Archbishop's Palace, Croydon; Ockwell Hall, Berkshire; the famous Glastonbury Barn; and many of the College Halls at the two Universities.

Many of these have been recorded in Mr. Nash's beautiful pictorial works on the mansions of England, and others have been practically delineated by the late Mr. Pugin, in his examples and specimens of Gothic Architecture, so that drawings of these are not so much called for: this, however, is not the case with roofs over Ecclesiastical structures; hitherto they have been scarcely attended to, and while almost every other part of our village Churches has been profusely illustrated, the roof, probably owing to its inaccessibility, and the many difficulties attendant on measuring it, has been omitted: it is hoped that these difficulties will be borne in mind, and serve as excuses for any want of explicitness that may occur in this work.

The materials used for these roofs were either oak or chestnut, and the different timbers were always morticed and tenoned together, and fixed with wooden pins—no iron ties or straps, or even nails, being used in any part. If we take these old roofs as models in the present day, let us also make use of the same materials; and, not for the sake of saving some paltry amount, stint the timbers of their proper proportions, or substitute fir for the more majestic and enduring heart of oak; otherwise we may have the mortification of seeing our own structures in ruins, while those of the so-called "dark ages," which have already lasted half-a-dozen centuries, are not only perfect, but bidding fair, if common attention be paid to them, to last for as many more.

* Also illustrated in "Nash's Mansions."



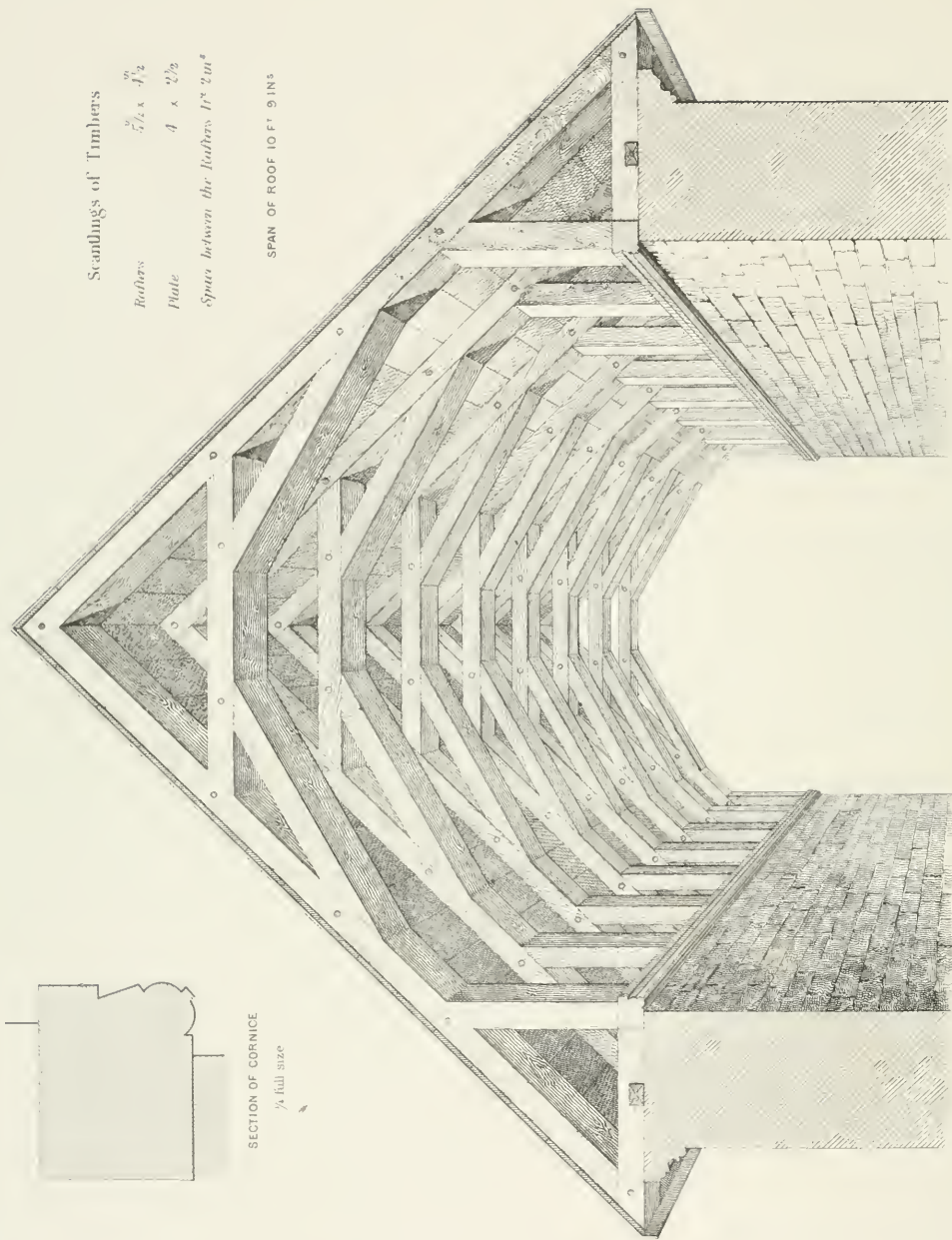
SECTION OF CORNICE

$\frac{1}{4}$ full size

Standings of Timbers

Roofers	$\frac{5}{8}$ x $4\frac{1}{2}$
Plate	4 x $2\frac{1}{2}$
Space between the Roofers	18" 2 in 4

SPAN OF ROOF 10 FT 9 IN 3



ROOF OVER SOUTH PORCH OF HECKINGTON CHURCH, LINCOLNSHIRE

THE OPEN TIMBER ROOFS

OF THE

MIDDLE AGES.

DESCRIPTION OF PLATES.

PLATE I.

ROOF OVER SOUTH PORCH OF HECKINGTON CHURCH, LINCOLNSHIRE.

THIS is one of the simplest description of the trussed-rafter roofs; the angle formed at the ridge, about 88° , is rather too large to allow of a pleasing effect being obtained in the outline of the soffit of the arch, which in this instance has too depressed a shape; the nearer equal the sides and angles of the polygon are, the more agreeable is the appearance of the soffit: when it is intended to board and panel the ceiling it becomes almost essential that a regular figure should be formed by the braces, rafters, and collar-beam.

In addition to the plate, which is placed about the centre of the wall-beams, and on which these latter are halved, is another, projecting slightly from the face of the wall into the porch, and moulded to form a cornice, into which both the struts and wall-beams are tenoned: this member is of considerable importance in keeping all the trusses in their proper positions. The roof is boarded longitudinally, and covered with lead.

The Church where this roof occurs is far-famed as one of the most beautiful in the county; and the south front of the porch is not surpassed—indeed, it is scarcely equalled—for beauty of design by any in the land.

	ft.	in.
Span of Roof	10	9

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Rafters	0	$5\frac{1}{2}$	by $4\frac{1}{2}$
Central Plate	0	4	by $2\frac{1}{2}$
Space between the Rafters	1	2	

Scantlings of Timbers.

Wall plate	8	12
	3	x 4
Collar	6 1/2	x 3 1/2
Rafter	6	x 5

Space in the clear between the rafters 12 in.

SPAN OF NAVE ROOF 14 FEET.

ROOF OVER NAVE & AISLE OF

LONG STANTON CHURCH

CAMBRIDGESHIRE

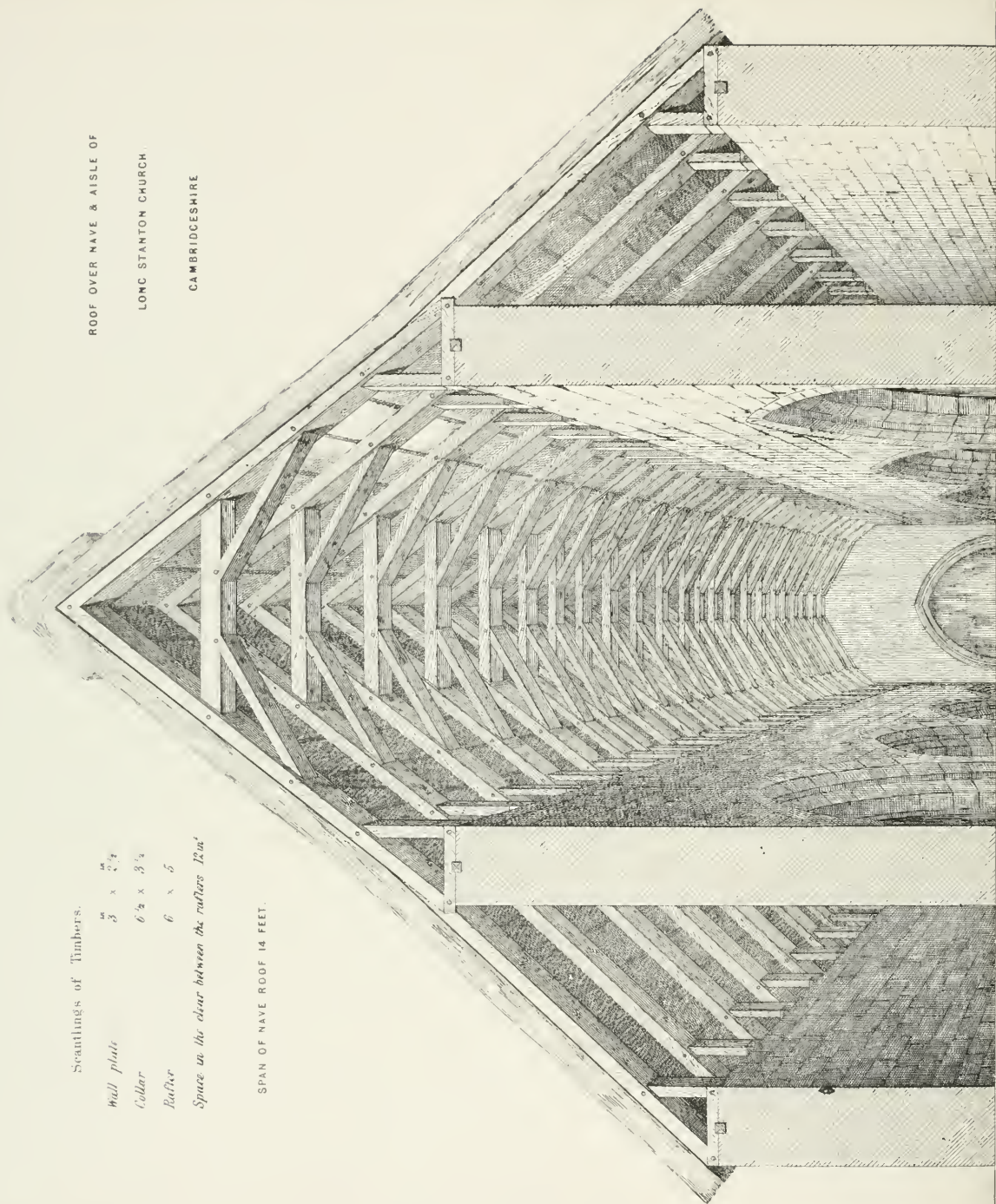


PLATE II.

ROOF OVER NAVE AND AISLES OF LONG STANTON CHURCH,
CAMBRIDGESHIRE.

THIS roof, though of a steeper pitch than the one just described—being an angle of 76° —has still an unsatisfactory appearance, owing to the braces being so much longer than the parts of the rafters and collar-beam which form the other sides of the polygonal soffit; it is however a valuable specimen, as exemplifying how the aisles were treated in a roof of this description.

All the timbers of this roof are extremely rude; and, having been lathed and plastered underneath, it was no easy matter to get at the various parts, the only means being by creeping along over the ceiling with a lighted candle—no very safe experiment, considering that the roof is covered with thatch. There is no longitudinal tie whatever in this roof, other than that formed by the thatch.

The aisle roofs are simply a continuation of the rafters of the nave, resting on the usual triangular-shaped feet, which in these, as well as the nave roof, are halved on a centre plate.

The building over which this roof occurs has been described and illustrated in our work on Parish Churches.

	ft. in.
Span of Nave Roof	14 0

SCANTLINGS OF TIMBERS.

	in. in.
Rafters	6 by 5
Collar-beam	$6\frac{1}{2}$ by $3\frac{1}{2}$
Wall-plate	3 by $2\frac{1}{2}$
Space between the Rafters	12

Scantlings of Timbers

Rafters $\frac{11}{16}$ x $4\frac{1}{2}$

Struts A B 6 x 6

Space between the Rafters 17' 0" 2

SPAN OF ROOF 17 FEET.

ROOF OVER THE NAVE OF

LYMPENHOE CHURCH,

NORFOLK.

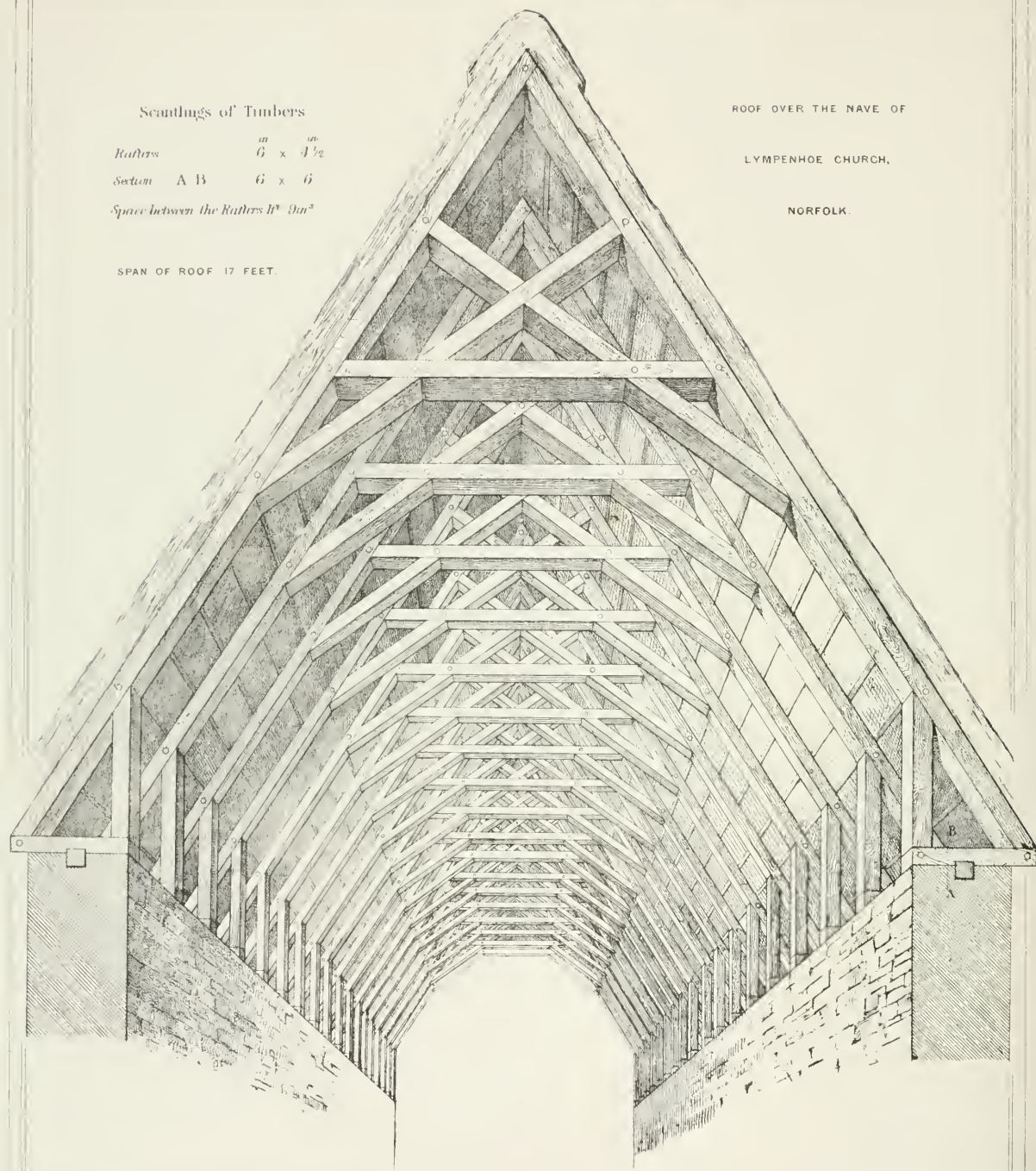


PLATE III.

ROOF OVER THE NAVE OF LYMPENHOE CHURCH, NORFOLK.

This roof differs from the two preceding ones, not only in its pitch—which is much steeper, forming at the ridge an angle of 66° —but also in the arrangement of its braces; which, traversing the collar-beam, intersect each other, and finally are tenoned into the opposite rafters from which they started.

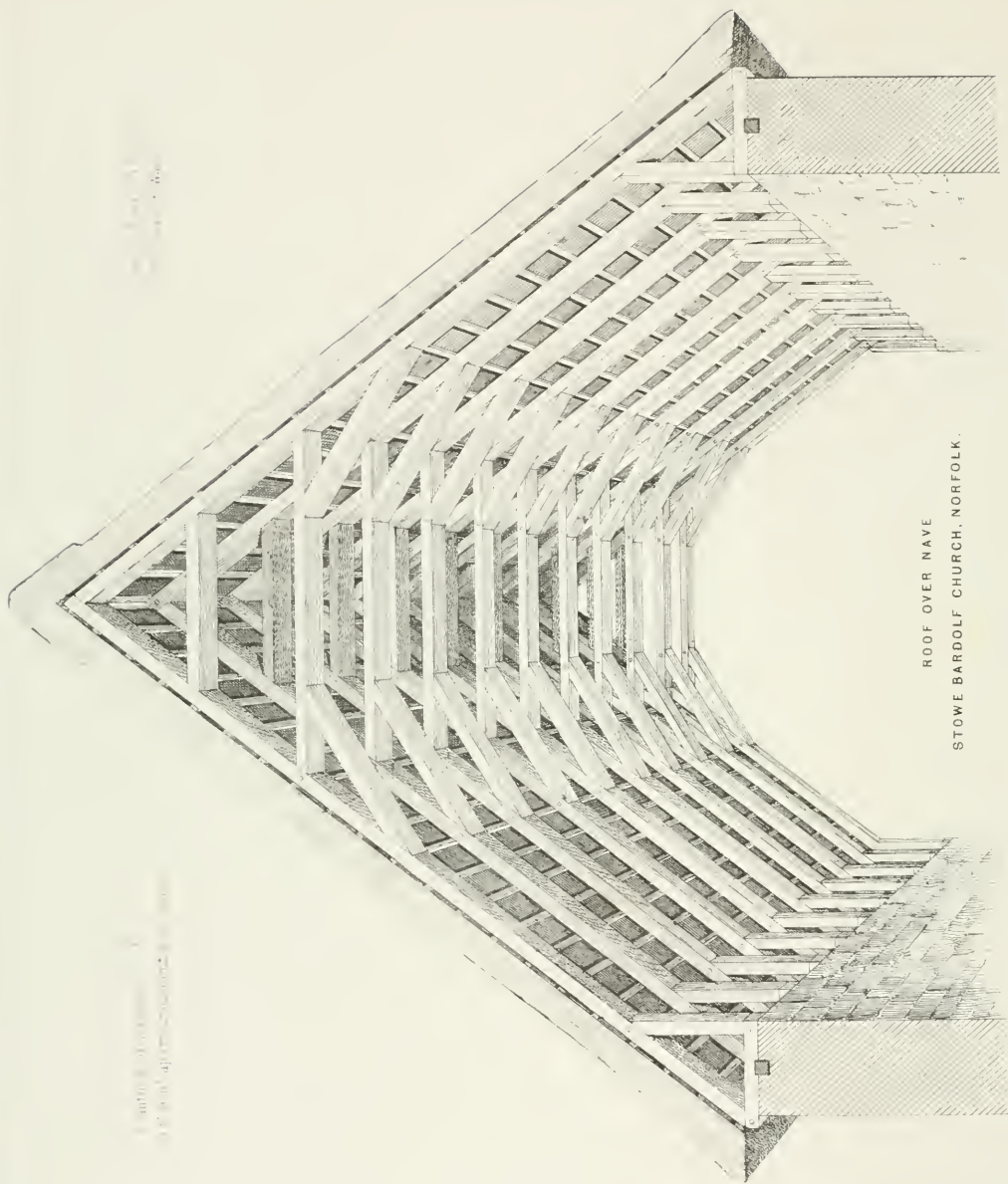
The shape of the polygonal arch—described by the rafters, braces, and collar-beam—in this roof, is much more pleasing than in those already described.

The Church where this roof occurs is a very small one, consisting of an apsidal Chancel, nave, and west tower. The Church was originally Norman; but little of the early work remains, with the exception of the south door, which is very good, and a small lancet window: the apse has been rebuilt in brick; the tower, which is now almost destroyed, has been good perpendicular work; the roof is covered with thatch.

Span of Roof	ft.	in.
	17	0

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Rafters	6	by	$4\frac{1}{2}$
Wall-beam	6	by	6
Space between the Rafters	1	9	



ROOF OVER NAVE
STOWE BARDOLF CHURCH, NORFOLK.

PLATE IV.

ROOF OVER THE NAVE OF STOWE BARDOLPH CHURCH, NORFOLK.

THE principal difference between this roof and the preceding ones is the second collar-beam, otherwise the principle of construction is the same; this collar or wind-beam is placed just where the braces would frame into the rafters if they were prolonged, as in the roof over Lympenhoe Church (Plate 3): its office is to act as a stiffener rather than a tie, and is preferable to the intersecting braces, inasmuch as it economises timber, and obviates the necessity of halving the collars and braces where they intersect. This roof is lathed and plastered; but we rejoice to say this ceiling will be stripped off, and the timbers of the roof again restored to view, as the whole Church is now undergoing a thorough restoration.

The Church consists of Chancel, with a mortuary Chapel on the north side, nave, west tower, and south porch; the main portions of the building are of the Decorated period, though there are evidences of earlier work. The Church contains some good plain open seats of late date.

		ft.	in.
Span of Roof		23	10

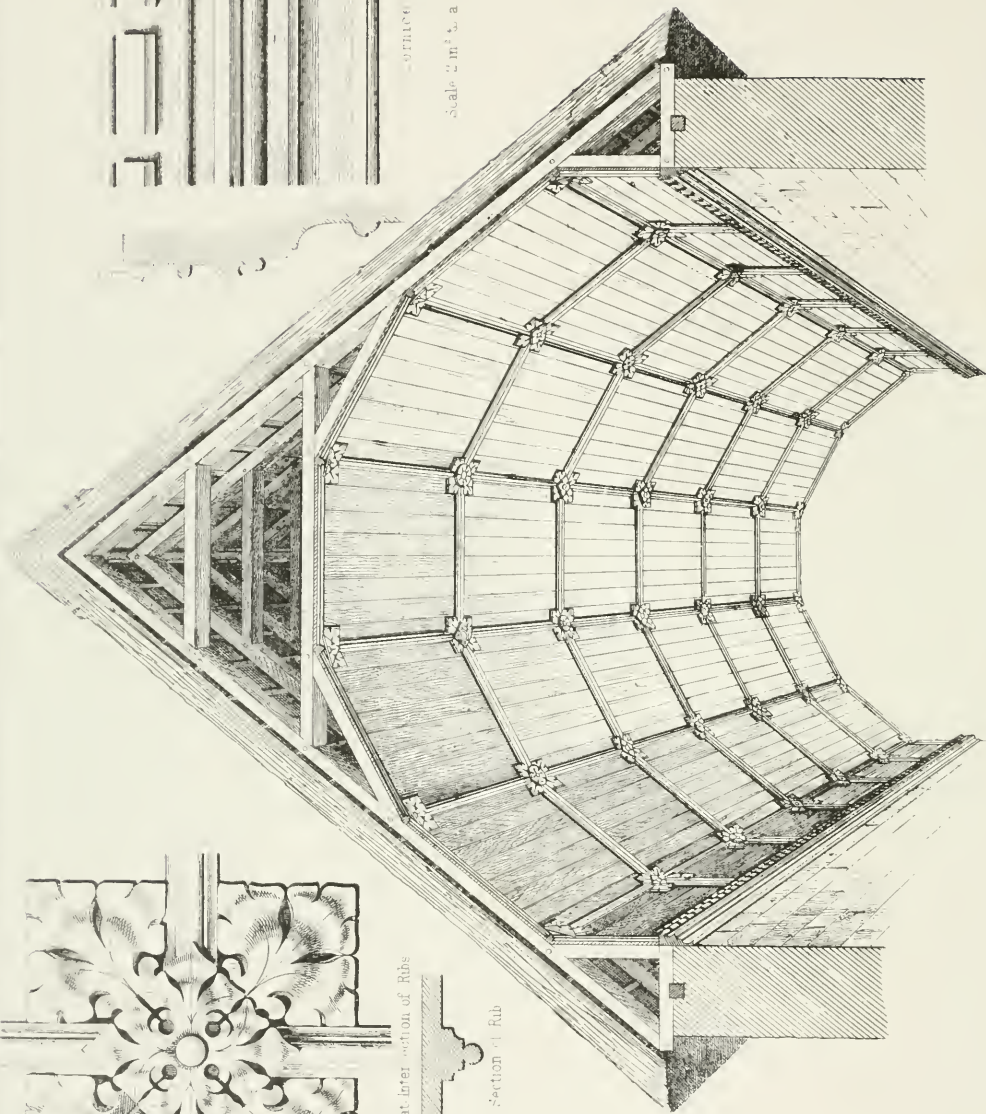
SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Rafters, Collars, &c.	5	by	4½
Space between the Rafters	1	9	



Section of Rub

Scale 2 m to a foot



ROOF OVER NAVE
ST MARY'S CHURCH, WIMBOTSHAM, NORFOLK.

Span of Roof 21 ft 9 in.
in clear of Walls

Scantling of Rafters $4\frac{1}{2} \times 4$
1 ft 9 in^o apart from centre to centre

PLATE V.

ROOF OVER NAVE OF WIMBOTSHAM CHURCH, NORFOLK.

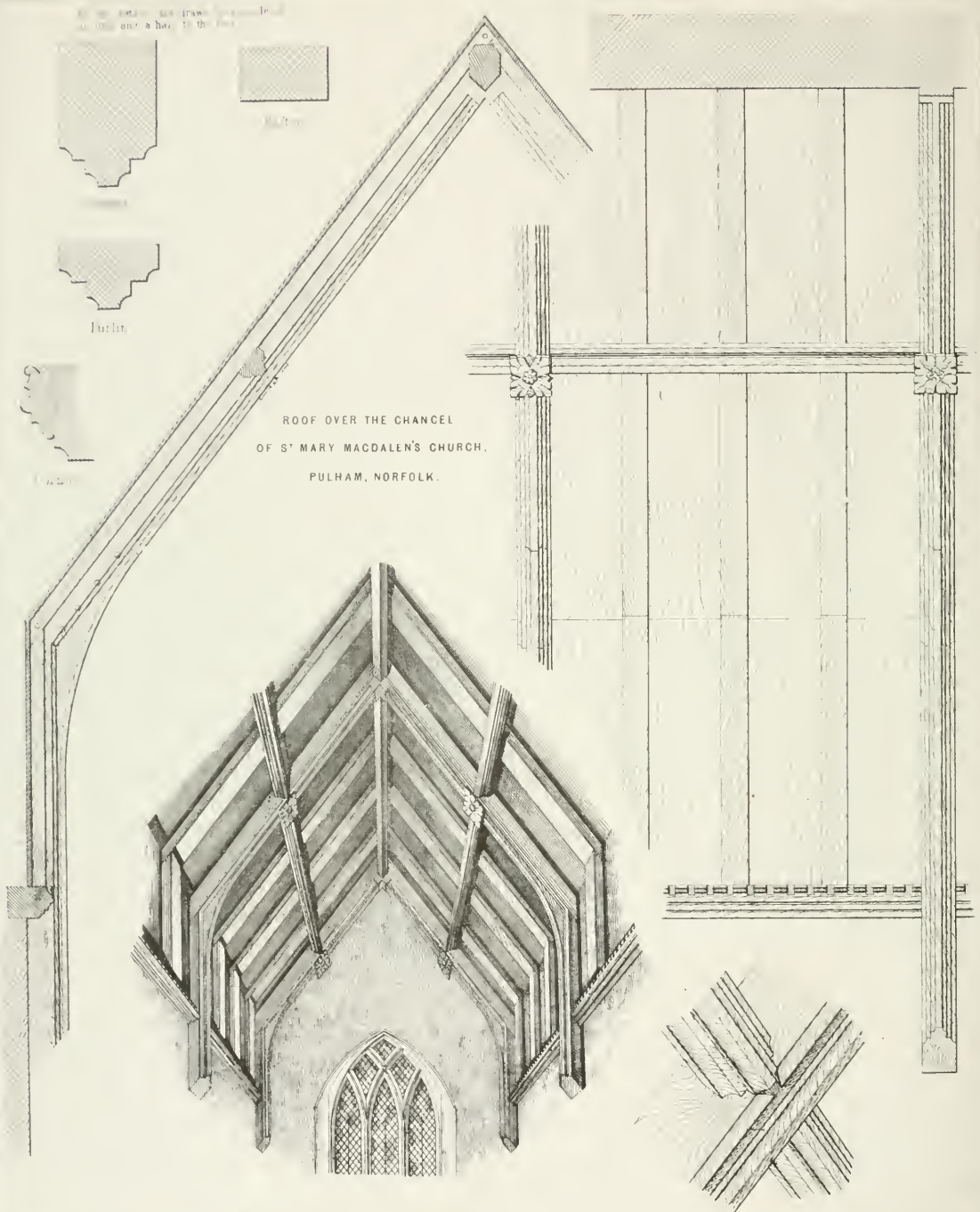
THIS Church, which is situate about a mile from Stowe Bardolph, is covered with a roof of very similar construction: the angle formed by the rafters at the ridge of the roof over Stowe Church is of 77° , at Wimbotsham it is of 78° ; the collar-beam in this latter example is placed rather lower down in the roof than it is in Stowe, which allows of the sides and angles of the polygonal soffit being nearly equal. This roof is boarded under the timbers, and divided into panels by small moulded ribs, with well carved bosses at the intersections; in addition to these the roof is further enriched by a small embattled cornice. Judging from the mouldings of this cornice, and from the bosses, among which occur some with lions' heads—a peculiarly Decorated feature, we should feel inclined to consider this roof to be of that style of Architecture. The whole of the mouldings and carved portions of this roof have been richly coloured; the panels bear no traces of having been similarly ornamented.

This Church consists of Chancel, nave, west tower, and north porch, and contains some very interesting features, which have been fully illustrated and described in one of the volumes of the Transactions of the Norfolk Architectural Society, by the Rev. C. Boutell and the Rev. G. H. Dashwood.

					ft.	in.
Span of Roof	.	.	.	.	21	9

SCANTLINGS OF TIMBERS.

					ft.	in.	in.
Rafters, Collars, &c.	.	.	.	.	4½	by	4
Space between Rafters	.	.	.	.	1		9



SCALE 1" = 6 FEET

Sketch showing the junction of Purlin and Rafter with the flower removed

PLATE VI.

ROOF OVER CHANCEL OF ST. MARY MAGDALEN'S CHURCH, PULHAM,
NORFOLK.

THE construction of this roof is remarkably bold, and could only be imitated with safety in cases where the span is inconsiderable, and the walls either very thick or well buttressed; in this instance, the walls are nearly three feet in thickness, and the width of the Chancel is only fifteen feet. The principal difference that exists between this roof and those already described, is the introduction of principal rafters and wall-pieces, with a very small curved brace uniting the two; the ridge-piece and purlins are framed into the principal rafters, and the inner wall-plate, which is moulded and forms the cornice, as in the porch-roof at Heckington Church (Plate 1), is framed into the wall-pieces. There probably exists a middle wall-plate, into which the wall-beams are halved, but as the space between the struts is closely boarded up, there is no means of ascertaining this. The wall-pieces in this instance act as the main-stay to prevent the roof from spreading.

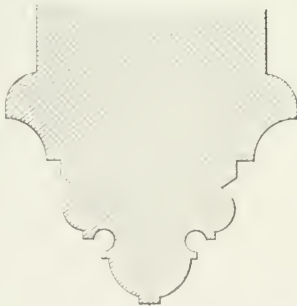
	ft.	in.
Span of Roof	15	0

SCANTLINGS OF TIMBERS.

	ft.	in.	ir.
Principal Rafters	8	by	6½
Common Rafters	5½	by	4
Purlin	6	by	4
Cornice-plate	6	deep.	
Space between the Trusses	4	0	

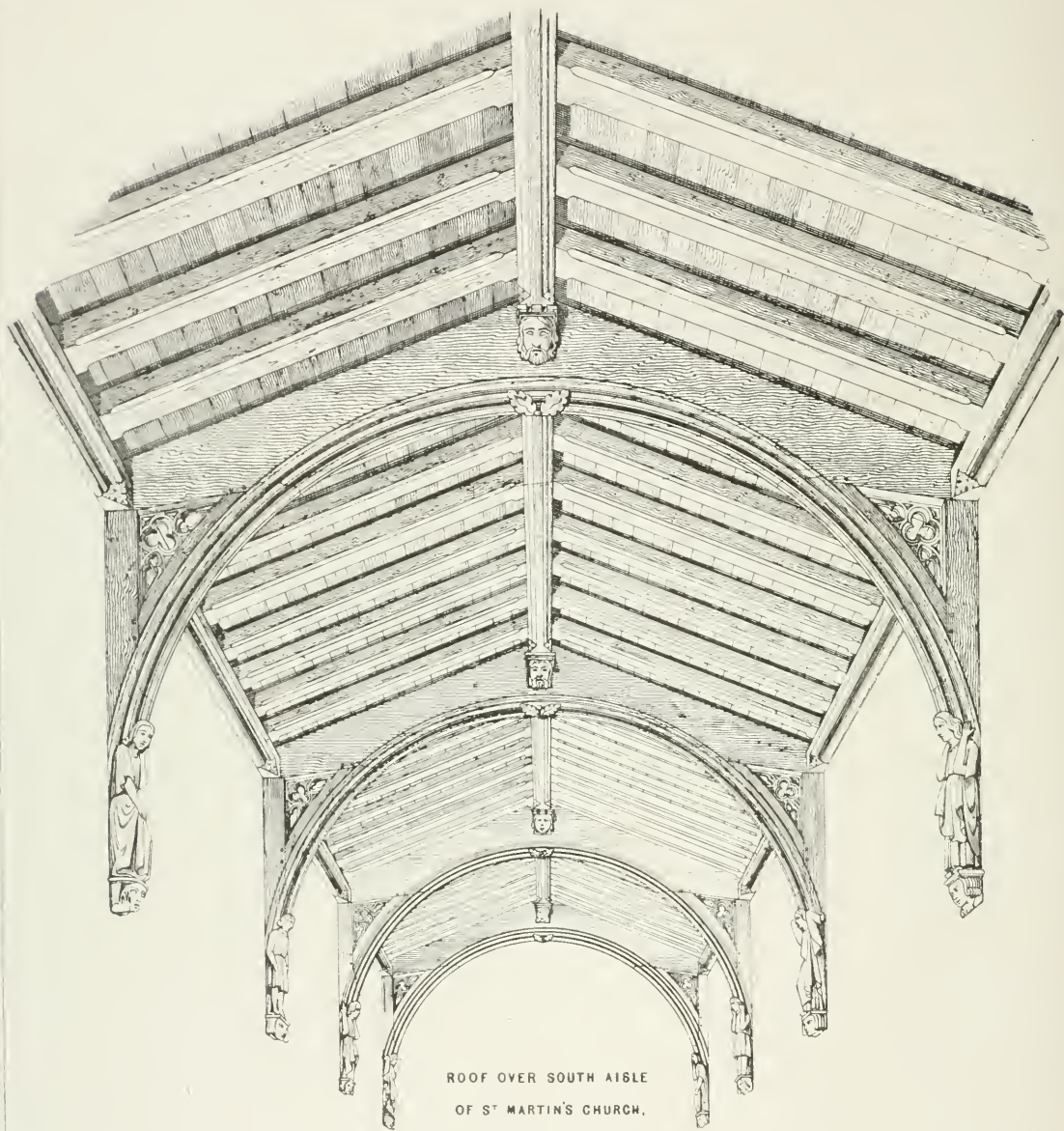
ROOF OVER SOUTH AISLE.
OF ST MARTIN'S CHURCH.
LEICESTER

section 0 0



Span of Roof 44 feet 6 inches
Distance from centre of
Trusses 16 feet 6 inches

SCALE OF 12 11 10 9 8 7 6 5 4 3 2 1 0 FEET



PLATES VII. AND VIII.

ROOF OVER THE GREATER SOUTH AISLE OF ST. MARTIN'S CHURCH,
LEICESTER.

THIS roof, which is of early decorated workmanship, is an exceedingly interesting one ; it consists of an enormous beam, which reaches up to the ridge of the roof, and following the incline of the rafters : from the ends of this, wall-pieces hang down, and are supported on small curved heads : the lower part of these wall-pieces is exceedingly well carved into emblematic figures of the principal virtues ; from off the heads of these springs an arch formed by the braces and the tie-beam itself—the latter being hollowed out to complete the curve, which is almost semi-circular. This arch is beautifully moulded, and at the apex has a small knot of foliage well carved out of the solid : the ridge-piece is supported on well-executed heads, tenoned into the tie-beam : the spandrels formed by the wall-pieces and curved braces, with the tie-beams, are filled in with tracery ; the wall-plates forming the cornice are well moulded.

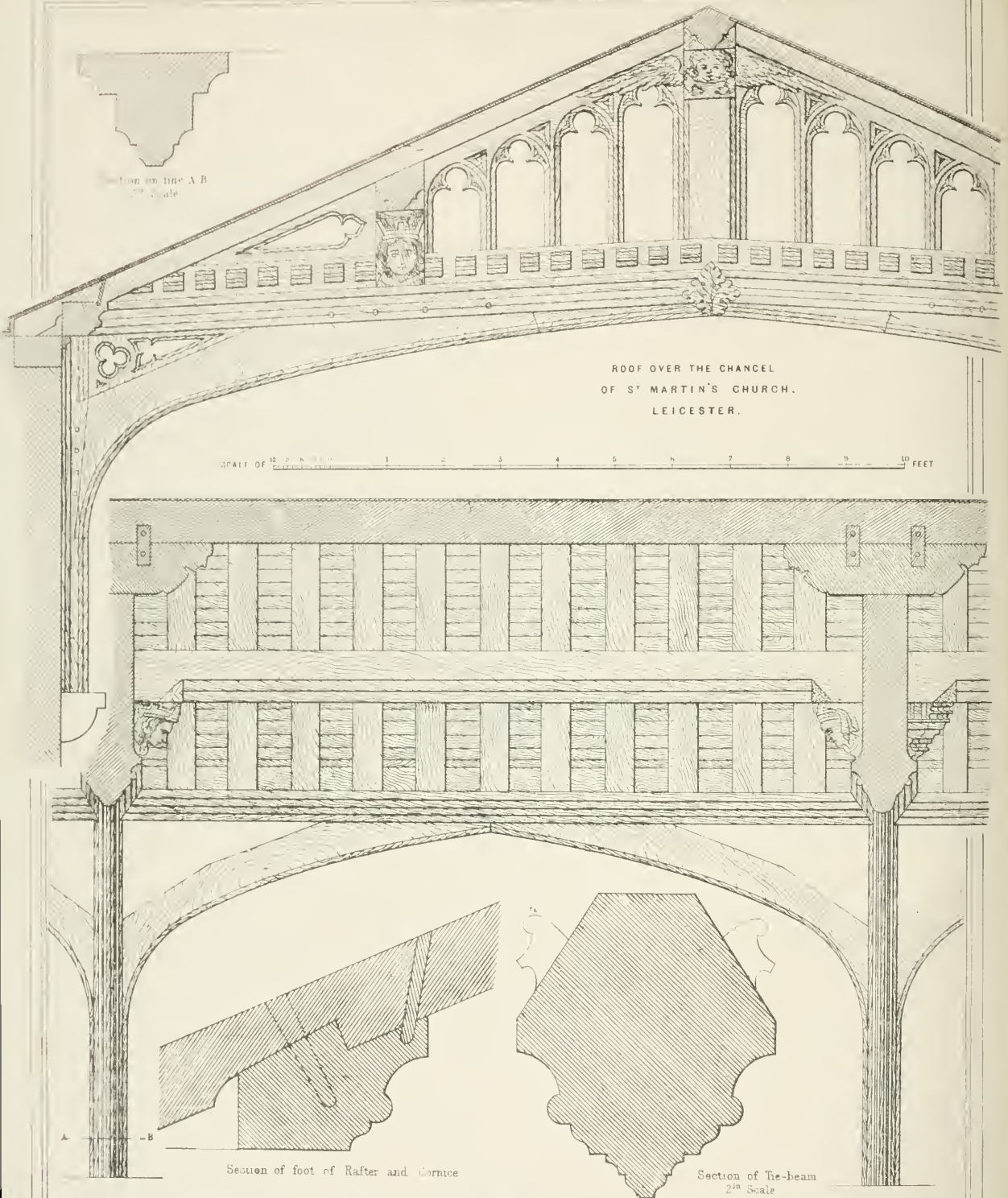
A very similar roof to this exists at Sparsholt, in Berkshire ; the main difference in the construction being, that this latter has purlins and no carved figures at the bottom of the wall-pieces.

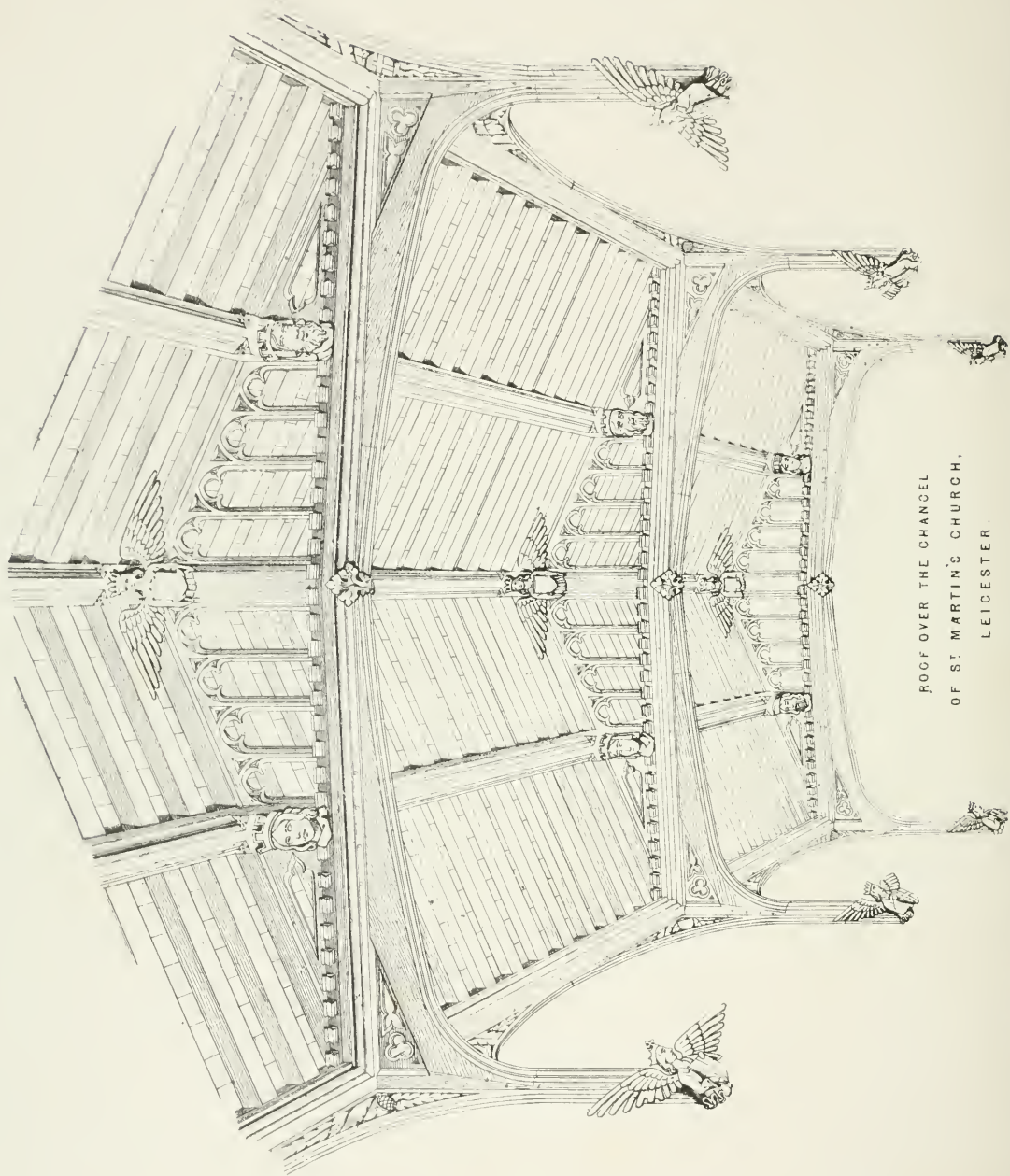
The whole of this roof has been reconstructed in English oak, following as nearly as possible the details of the old one.

	ft.	in.
Span of Roof	21	0

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
The Trusses are	1	1	thick.
Cornice	12	by	9
Ridge	12	by	10
Common Rafter	8	by	6
Space between the Trusses	15	6	





ROOF OVER THE CHANCEL
OF ST MARTIN'S CHURCH,
LEICESTER.

PLATES IX. AND X.

ROOF OVER THE CHANCEL OF ST. MARTIN'S CHURCH, LEICESTER.

THIS is a tie-beam roof, but without any principal rafters ; a massive beam is laid across the Chancel, on which are supported the ridge-piece and purlins ; the former on a template about three feet six inches long, resting on a strut or king-post, which is tenoned into the tie-beam, and the latter on templates, about two feet six inches long, notched on to the tie-beam itself. The cornice is framed into the tie-beam, and does not rest upon the wall at all : from the underside of the tie-beam at each end wall-pieces are dropped, from which spring arched braces under the tie-beam and cornice ; so that, in fact, the whole weight of the roof is borne by the tie-beam, which is prevented from sagging by the curved braces : a plate is laid along the wall, which receives the lower ends of the rafters, the upper ends being framed into the ridge-piece.

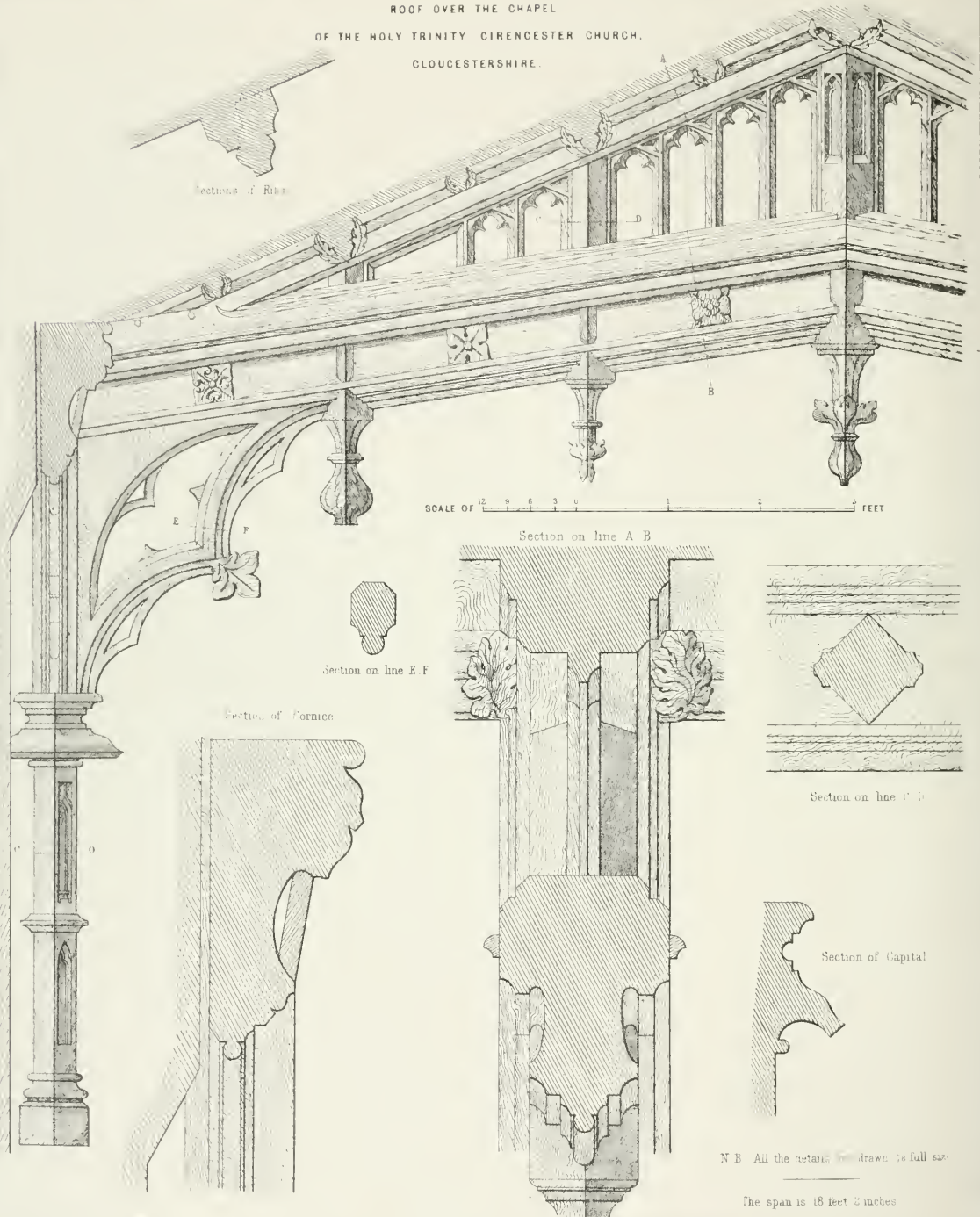
This roof has been entirely reconstructed in English oak, after the model of the old one ; the only variations being in the carved cornice braces, and in the substitution of angels with outspread wings, at the end of the wall-pieces instead of the stone corbels, which were modern.

	ft. in.
Span of Roof	23 0

SCANTLINGS OF TIMBERS.

	ft. in.		ft. in.
Tie-beam	1 8	by	1 2
Cornice	10	by	8
Purlin	10	by	10
Ridge	10	by	9
Common Rafter	6½	by	4½
Space between Trusses	12		6

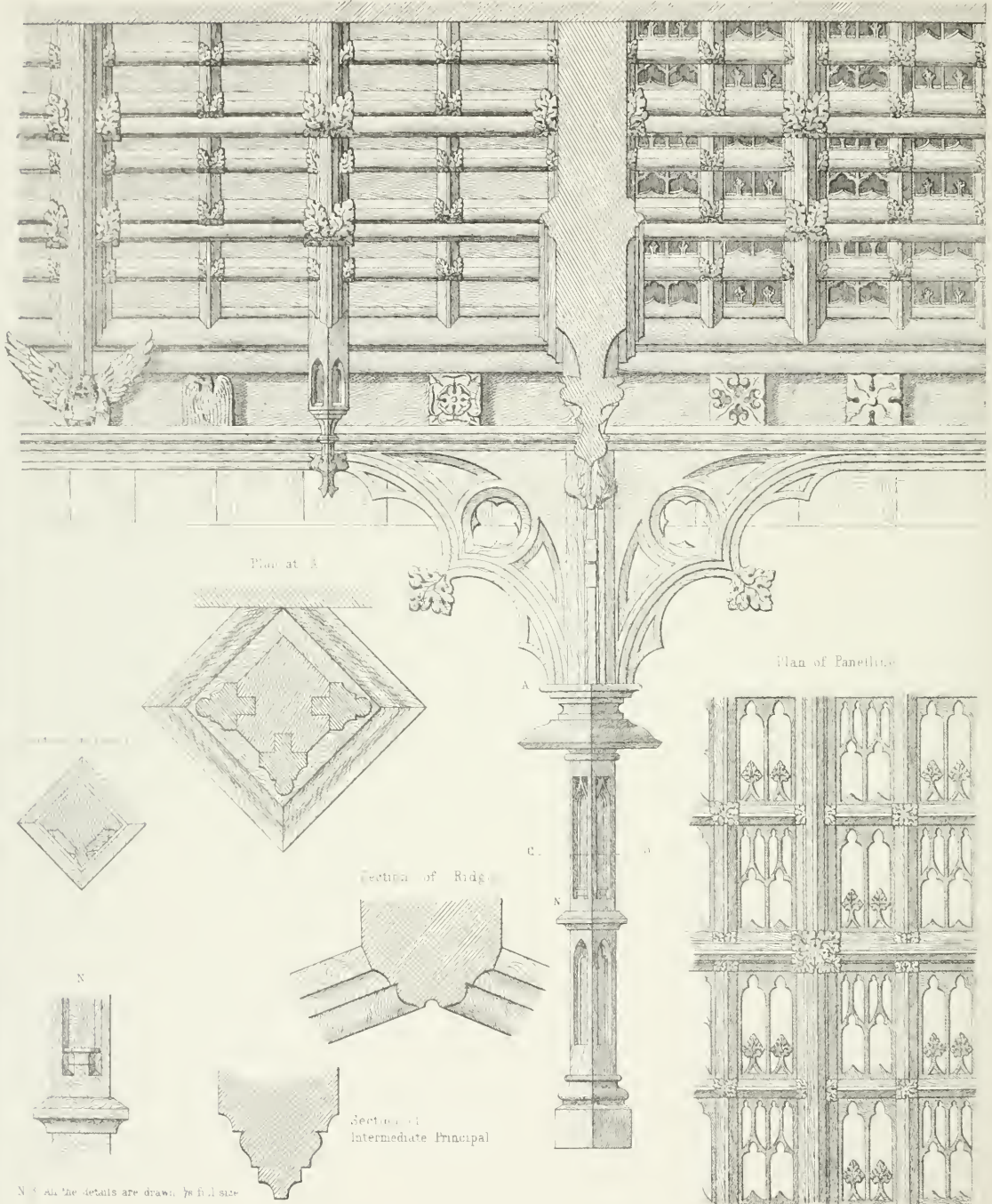
ROOF OVER THE CHAPEL
OF THE HOLY TRINITY CIRENCESTER CHURCH,
CLOUCESTERSHIRE.



N.B. All the details are drawn to full size.

The span is 18 feet 2 inches.

ROOF OVER THE CHAPEL OF THE HOLY TRINITY, CIRENCESTER CHURCH, GLOUCESTERSHIRE.

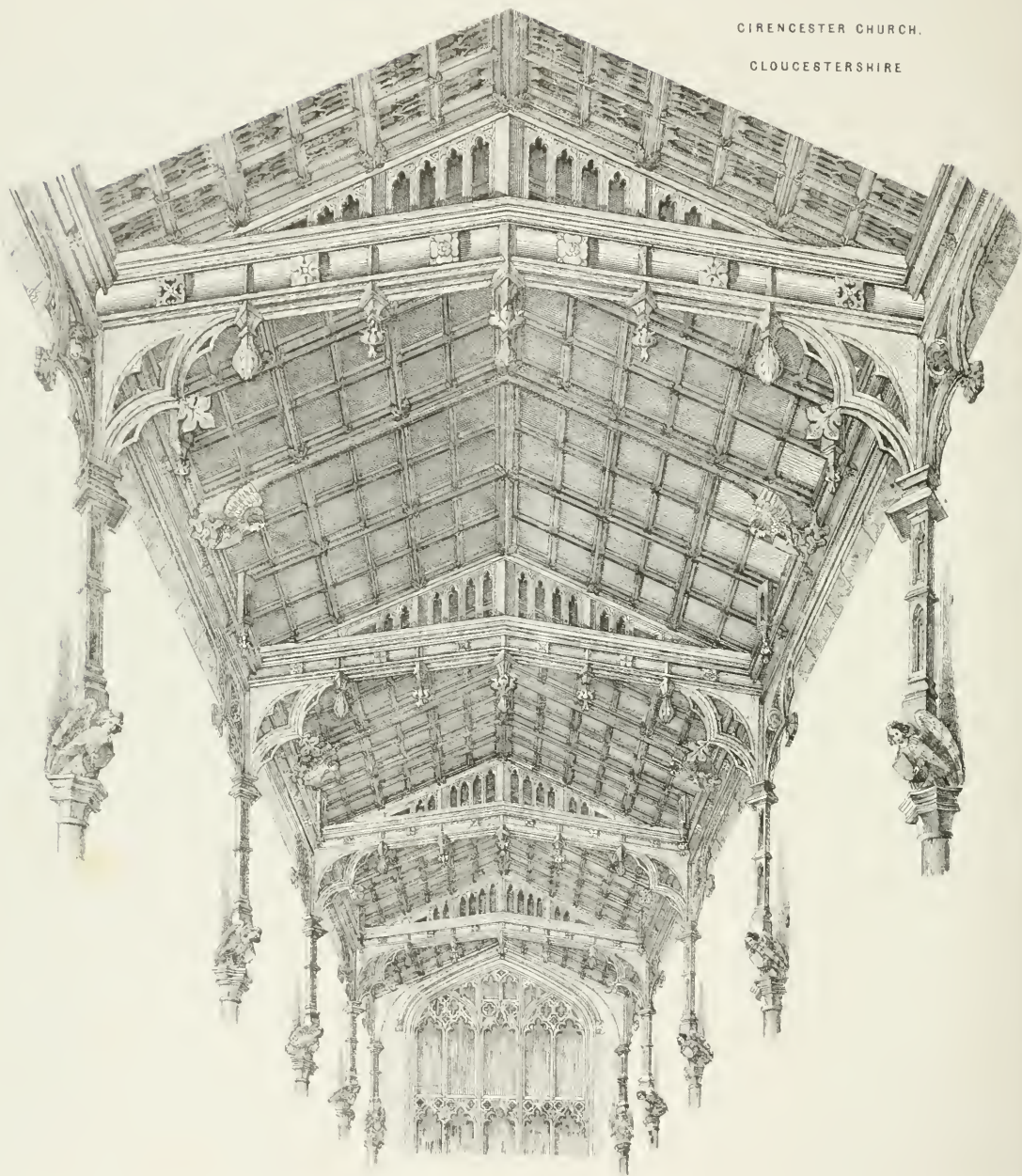


N.B. All the details are drawn to full size.

ROOF OVER TRINITY CHAPEL.

CIRENCESTER CHURCH.

GLOUCESTERSHIRE



PLATES XI. XII. AND XIII.

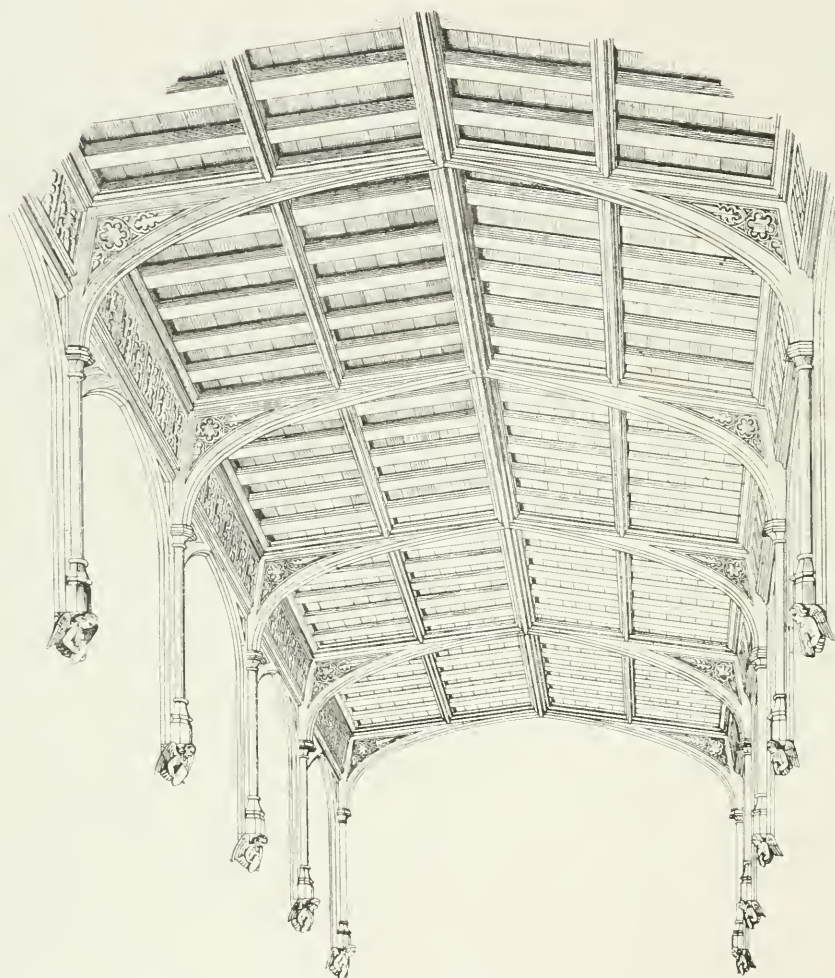
ROOF OVER TRINITY CHAPEL, CIRENCESTER CHURCH, GLOUCESTERSHIRE.

THIS roof, in general outline, is very similar to the one, just described, over the Chancel of St. Martin's Church, Leicester; it differs from it, however, in having principal rafters and intermediate trusses, into which the purlins are tenoned. Every part of this roof, susceptible of enrichment, has received it to the highest degree; the tie-beams are well moulded, with a deep casement filled in with flowers carved out of the solid; most elaborately carved bosses cover the intersections of all the mouldings. One very peculiar feature in this roof, and which is not often met with in other examples, is the pendant which terminates the upright supports under the purlins and ridge. The profusion of ornament, however, which is lavished upon every portion of this roof, does not compensate for the want of height, which imparts to the whole design a depressed and heavy appearance. As in the previously described roof the principal weight falls on the tie-beam, which, in accordance with the prevailing custom of the time, is much cambered.

					ft. in.
Span of Roof	.	.	.	.	18 0

SCANTLINGS OF TIMBERS.

					ft.	in.	in.
Tie-beam	.	.	.	.	2	8	by 11
Intermediate Principal	.	.	.	.		8	thick
Cornice	.	.	.	.	1	9	by 11
Braces	.	.	.	.		3	thick
Space from centre to centre of Trusses	.	.	.	.	11	0	



ROOF OVER NAVE
OF ST. ANDREW'S CHURCH,
NORWICH.

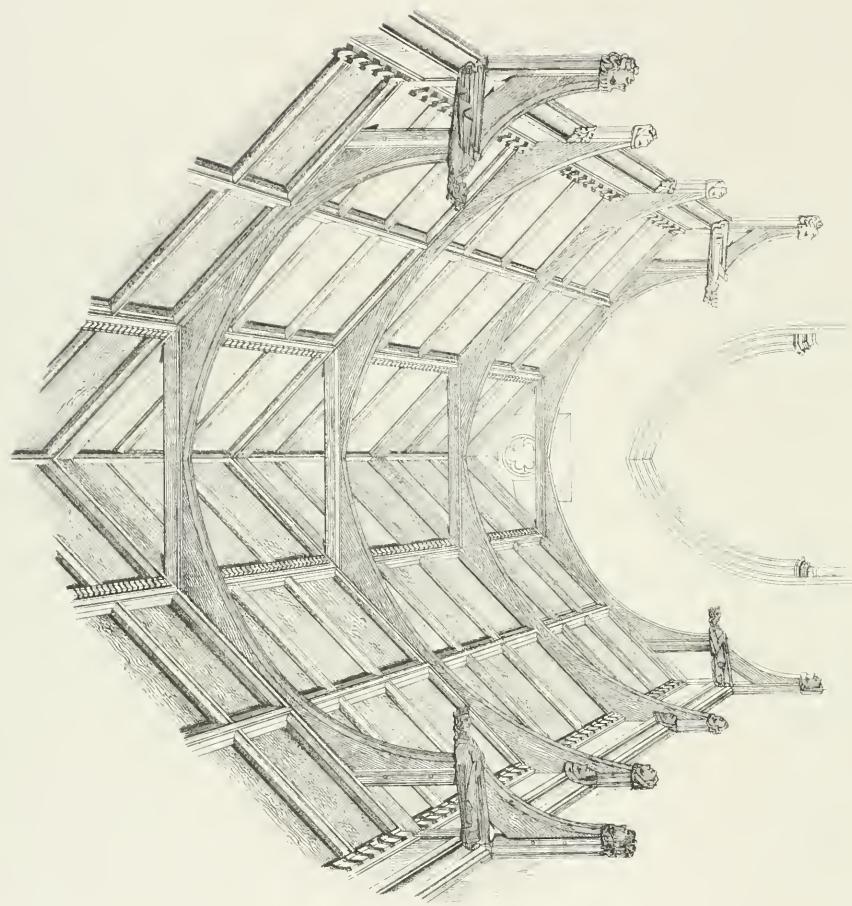
PLATE XIV.

ROOF OVER NAVE OF ST. ANDREW'S CHURCH, NORWICH.

WITH no more inclination than could be obtained by the camber of the beams, a very pleasing effect has been produced in this roof by the graceful outline of the curved braces and wall-pieces, which connect them with the walls : had a more pointed arch been introduced, there would have been too great an abruptness in its junction with the beam ; the disagreeable effect of a sharp angle is also further counteracted by the slight inclination of the cornice, thereby gradually uniting the line of the wall with the inclination of the rafters ; the long range of the clear story windows, with their flat four-centered arches, harmonizes well with the succession of arched braces that span the nave ; and altogether, were it not that the same city, in which we find this specimen, furnishes an example, showing how far superior is the effect of a high-pitched hammer-beam* roof over a similar clear story, we should hardly have thought it could be surpassed ; this being the case, who shall say that the present generation may not as much improve upon the hammer-beam roof of St. Stephen's Church, as that one exceeds the roof of St. Andrew's Church in beauty.

The width of the nave is about 21 feet.

* Roof over the Nave of St. Stephen's Church, Plates 32 and 33.



ROOF OVER NAVE
OF LITTLE WELNETHAM CHURCH.
SUFFOLK.

PLATE XV.

ROOF OVER NAVE OF LITTLE WELNETHAM CHURCH, NORFOLK.

THIS, though a late specimen, is a very good one of a hammer-beam roof; the spandrels over the hammer-beams and collars would be much improved by being filled in with tracery. In this roof two intermediate trusses occur between the main ones; this arrangement is called for by the positions of the windows. The length of the rafters is divided in three by the two purlins, and the spaces between the trusses is similarly divided by the rafters: the principal rafters, common rafters, and purlins are all moulded, and mitre with each other; the upper purlin is embattled, as is also the upper member of the cornice; the ridge-piece is scarcely perceptible; the spaces between the rafters are boarded, the rafters being rebated to receive the boarding. The carved heads and leaves which stop the mouldings of the cornice against the intermediate trusses appear to be the ends of the wall-beams, which are split, so as to admit of the curved braces passing between them.

The Church consists of Chancel, nave, and west tower; eastward of the Chancel may be traced the foundation of a semicircular apse, probably the remains of a Norman Church.

ROOF OVER THE NAVE
OF CAPEL S' MARY'S CHURCH
SUFFOLK.

Section of Principal

Section of Collar

Section of purlin
and batten.

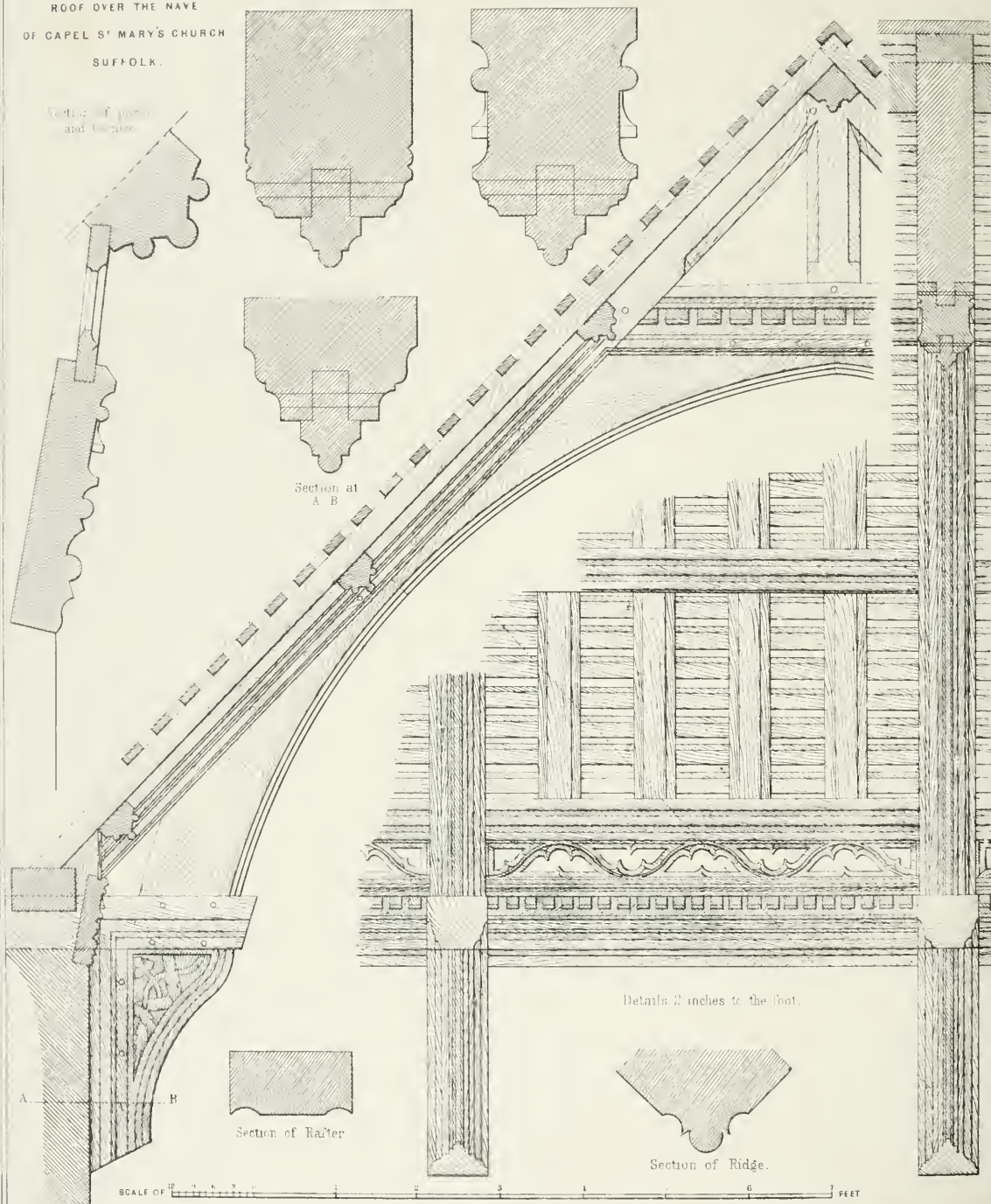
Section at
A B

Section of Rafter

Section of Ridge.

Details 2 inches to the foot.

SCALE OF 0 1 2 3 4 5 6 7 FEET



ROOF OVER THE NAVE OF
CAPEL ST MARY'S CHURCH,
SUFFOLK.



PLATES XVI. AND XVII.

ROOF OVER NAVE OF CAPEL ST. MARY'S CHURCH, SUFFOLK.

AN exceedingly good plain roof: the angle formed at the ridge is of 87° , and it is very seldom that we meet with hammer-beam roofs of a steeper pitch: it may be observed that in execution they generally look more acutely pointed than they are in reality; this may probably have given rise to the idea that old roofs were frequently of an angle of 60° , whereas, it is very rarely that they occur of so lofty a pitch, nor would the effect of such an inclination, except in particular cases, be pleasing.

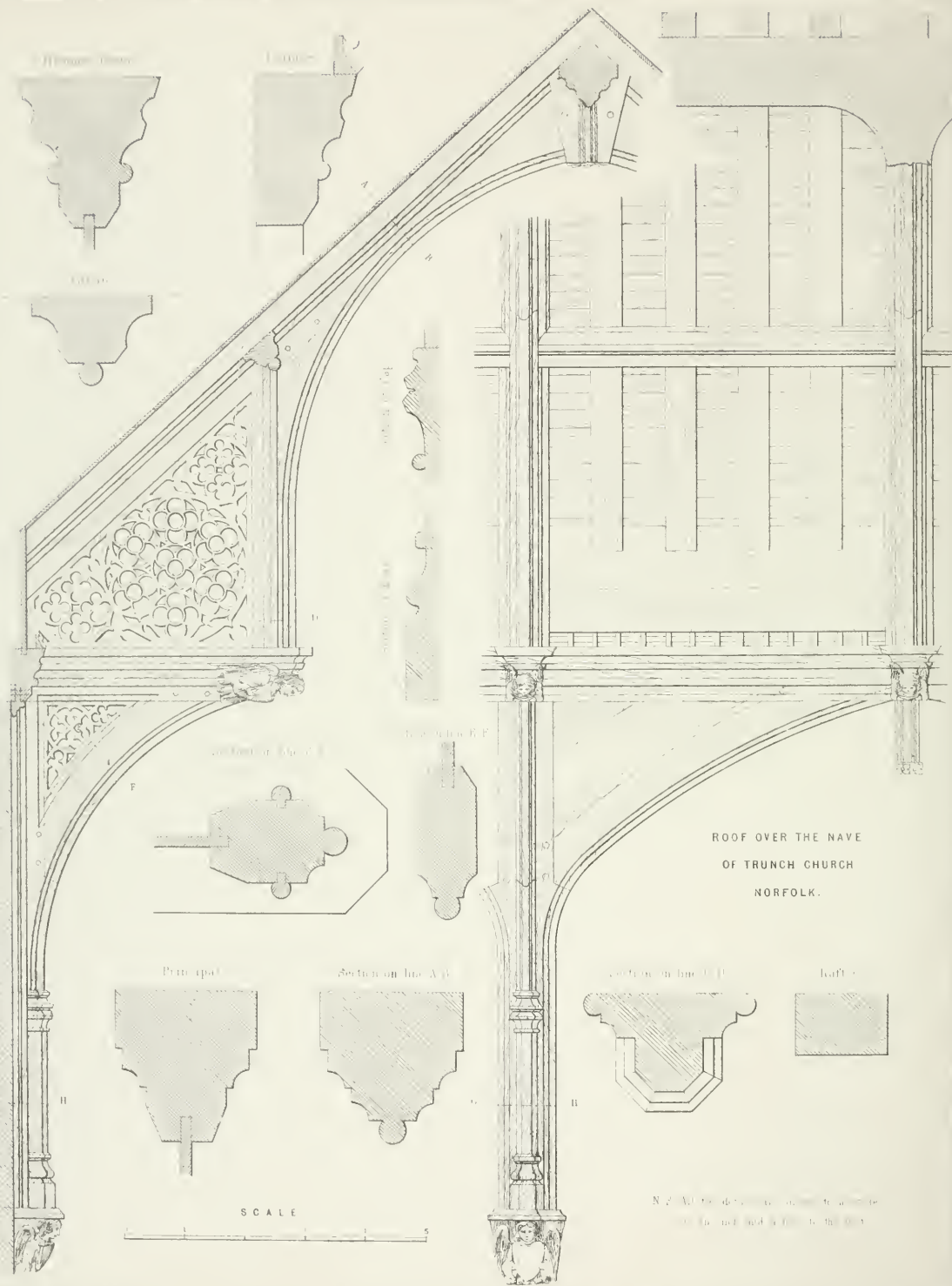
In this example the strut over the hammer-beam is omitted, and the curved brace is brought down and tenoned into the hammer-beam, which in this roof is very small—its projection being not much more than a ninth of the span, a common proportion being between a fourth and a fifth—so that it becomes little more than a collar-braced roof.

The whole of the timbers are well moulded, and the cornice is very effective; its construction is extremely simple: a moulded three-inch plank is tenoned into the hammer-beams, and between this and the lowest purlin is inserted a piece of open-work tracery, which gives a great relief and lightness to that part of the roof.

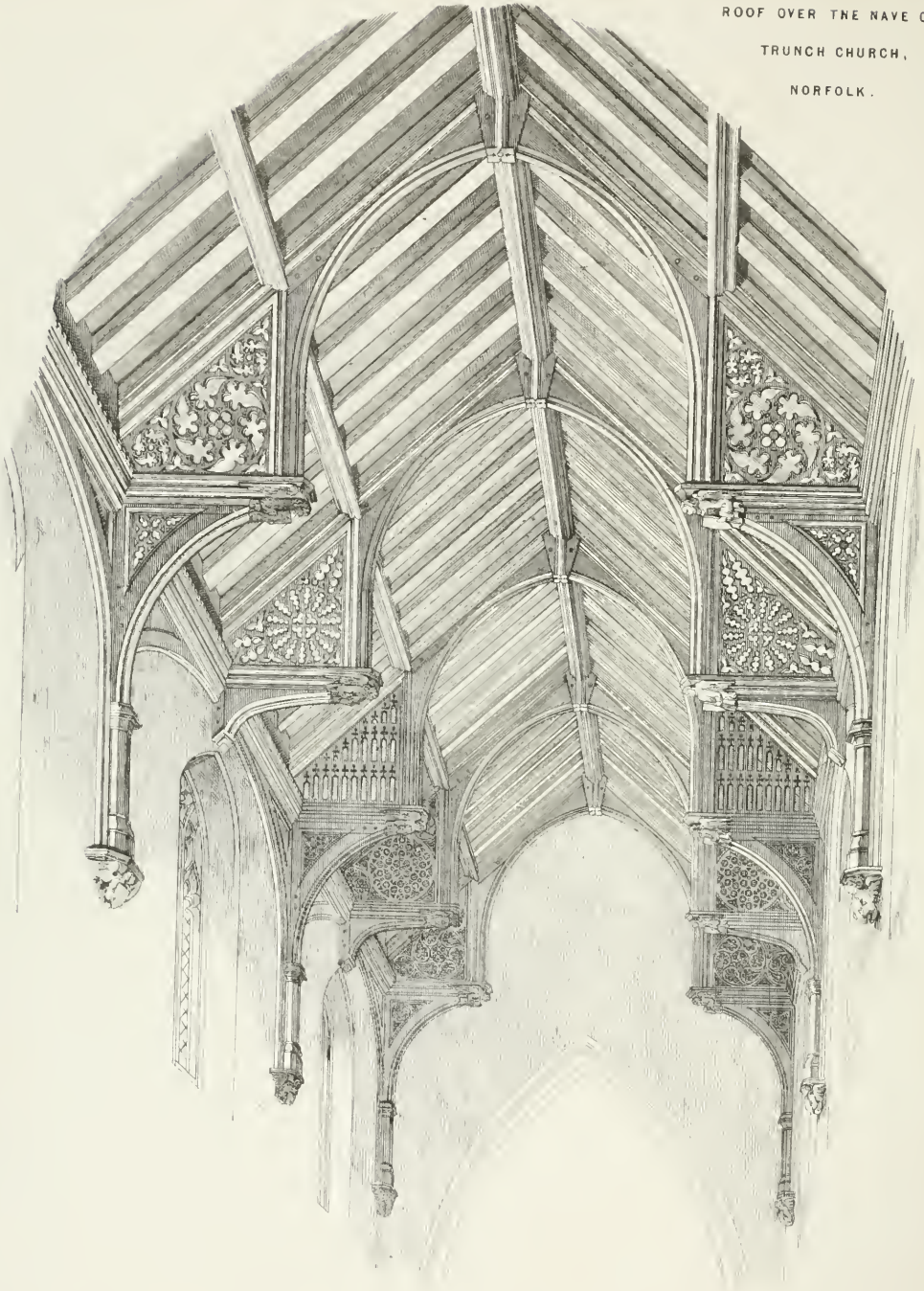
						ft.	in.
Span of Roof	.	.	.	.	.	18	3

SCANTLINGS OF TIMBERS.

						ft.	in.	
Principal Rafters	.	.	.	.	.	10	by	8
Common Rafters	.	.	.	.	.	6	by	3
Hammer-beam	.	.	.	.	.	10	by	8
Collar-beam	.	.	.	.	.	10	by	8
Purlins	.	.	.	.	.	6	by	5
Ridge-piece	.	.	.	.	.	6	by	6
Space from centre to centre of Trusses	.	.	.	.	.	6		0



ROOF OVER THE NAVE OF
TRUNCH CHURCH,
NORFOLK.



PLATES XVIII. AND XIX.

ROOF OVER NAVE OF TRUNCH CHURCH, NORFOLK.

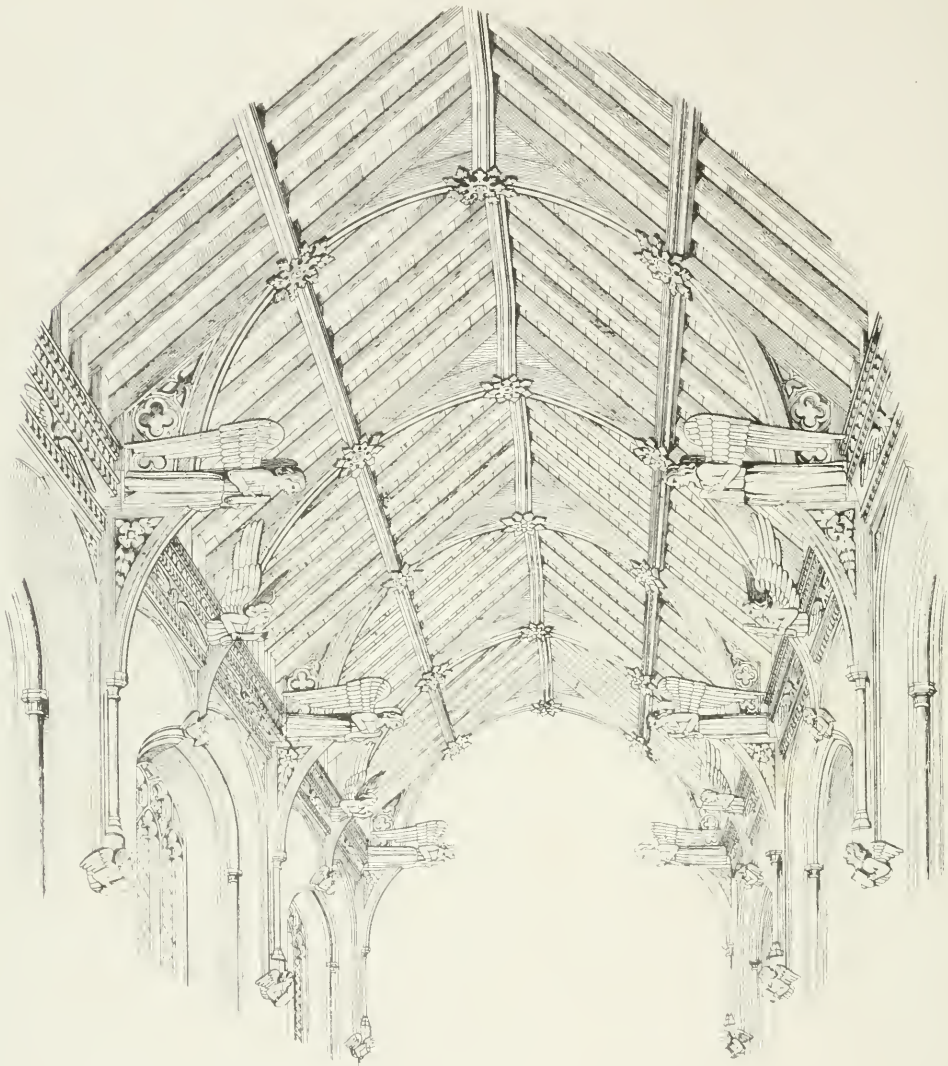
A VERY good variety of the hammer-beam roof : in this case the collar-beam is omitted altogether, and the hammer-beams are made to project somewhat more than usual into the Church. The upper portion of the curved brace is wrought out of the principal rafter, and tenoned at the apex of the arch into a wedge-shaped piece of timber, into which are also tenoned the ridge-piece and its braces ; this gives very great strength to the fabric.

The manner in which the intermediate trusses are managed is well deserving of notice : the central-arched brace is retained exactly the same as in the other trusses, and the hammer-beam itself is also similar ; but, instead of the long wall-piece and brace under it, the wall-piece is stopped at the crown of the arch of the clear-story window, and a very depressed brace connects it with the hammer-beam. The cornice is rather plain, but the tracery in the spandrels, which are unusually large, produces a very light and beautiful effect. The neighbouring Church at Worstead has a roof very similar in design ; but the nave being wider, and the hammer-beams not projecting so far in proportion, the roof altogether has a grander appearance.

					ft.	in.
Span of Roof	.	.	.	.	19	0

SCANTLINGS OF TIMBERS.

					ft.	in.	in.
Principal Rafters	.	.	.	.	10	by	9
Common Rafters	.	.	.	.	6	by	4
Hammer-beam	.	.	.	.	10	by	10
Purlin	.	.	.	.	8	by	5
Ridge-piece	.	.	.	.	10	by	10
Space between Trusses	.	.	.	.	5		6



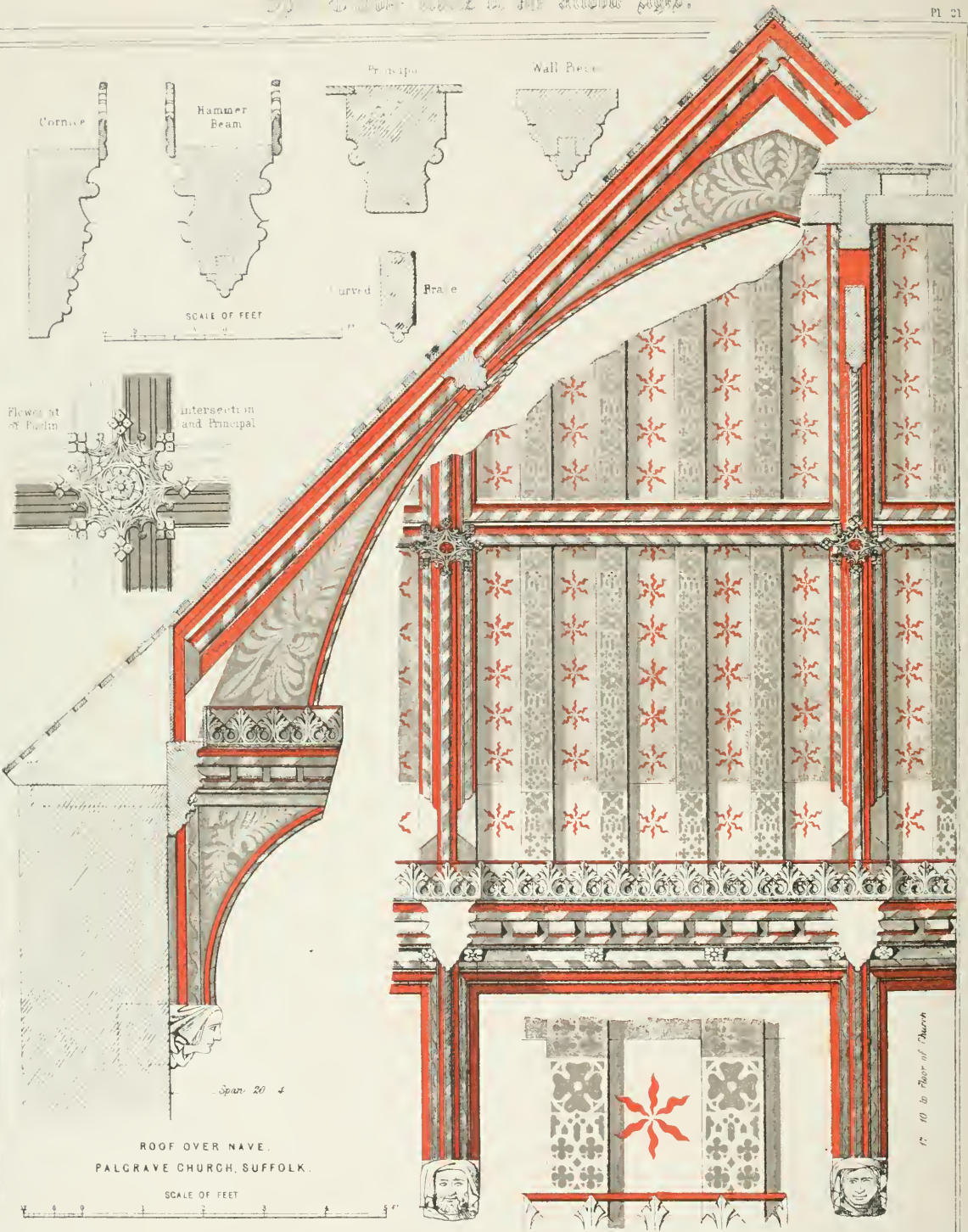
ROOF OVER NAVE
OF WYMONDHAM CHURCH,
NORFOLK.

PLATE XX.

ROOF OVER NAVE OF WYMONDHAM CHURCH, NORFOLK.

THIS is certainly the most beautiful roof in the present series, and not surpassed by any other Church roof that we know of; the hammer-beams, boldly projecting rather more than one-fourth the width of the nave, are exquisitely carved into figures of angels with wide expanding wings, holding in their hands scrolls for sacred texts or prayers. There are no collar-beams or struts, and the large arched braces that span the nave are set far back on the hammer-beams; the intermediate trusses have smaller hammer-beams, likewise carved into figures of angels, but made subordinate to those of the main trusses. Where the purlins and ridge-braces intersect the large arched braces are placed very large and beautifully carved flowers, which stand out in bold relief; the cornice is highly enriched with three rows of embattlements and one of strawberry leaves, besides the figures of angels in the lower compartment. The cornice braces, instead of forming one arch between the main trusses, as is usually the case, are in this instance subdivided into two, which connects them much better with the intermediate trusses, the lower ends of which, as well as the wall-pieces, are supported on stone corbels of angels bearing shields.

The beautiful roof over the north aisle of this Church has already been executed in our *Analysis of Gothick Architecture*, Section II. Woodwork, Plates 17 and 18.



PLATES XXI. AND XXII.

ROOF OVER NAVE OF PALGRAVE CHURCH, SUFFOLK.

A VERY good example for a small Church ; but of particular value on account of its colouring, which remains very perfect, and of which the accompanying plates give a faithful representation. In this roof the struts and collar-beams are omitted ; the place of the latter is supplied by the upper part of the arched brace, which is in one piece, uniting the two principal rafters together : it requires very large timber, however, to cut such braces out of. The manner in which the lowest member of the mouldings of the principal rafter is diminished towards the part where the purlins intersect it is curious, but the effect is not altogether satisfactory : the object is, of course, to form an abutment for the arched braces ; but the more usual plan, of leaving a portion of the timber projecting and forming part of the curved brace, without interfering with the mouldings—as shown in the roof over St. Stephen's Church (Plate 32)—is preferable. The carved flowers which cover the intersections of the purlins and principal rafters are very effective.

					ft.	in.
Span of Roof	.	.	.	.	20	4

SCANTLINGS OF TIMBERS.

					ft.	in.	in.
Principal Rafters	.	.	.	.	1	1	by 10
Common Rafters	.	.	.	.		6	by 4
Hammer-beam	.	.	.	.	1	1	by 10
Cornice	.	.	.	.	1	7	by 7
Wall-piece	.	.	.	.		10	by 7
Space between the Trusses	.	.	.	.	5	9	

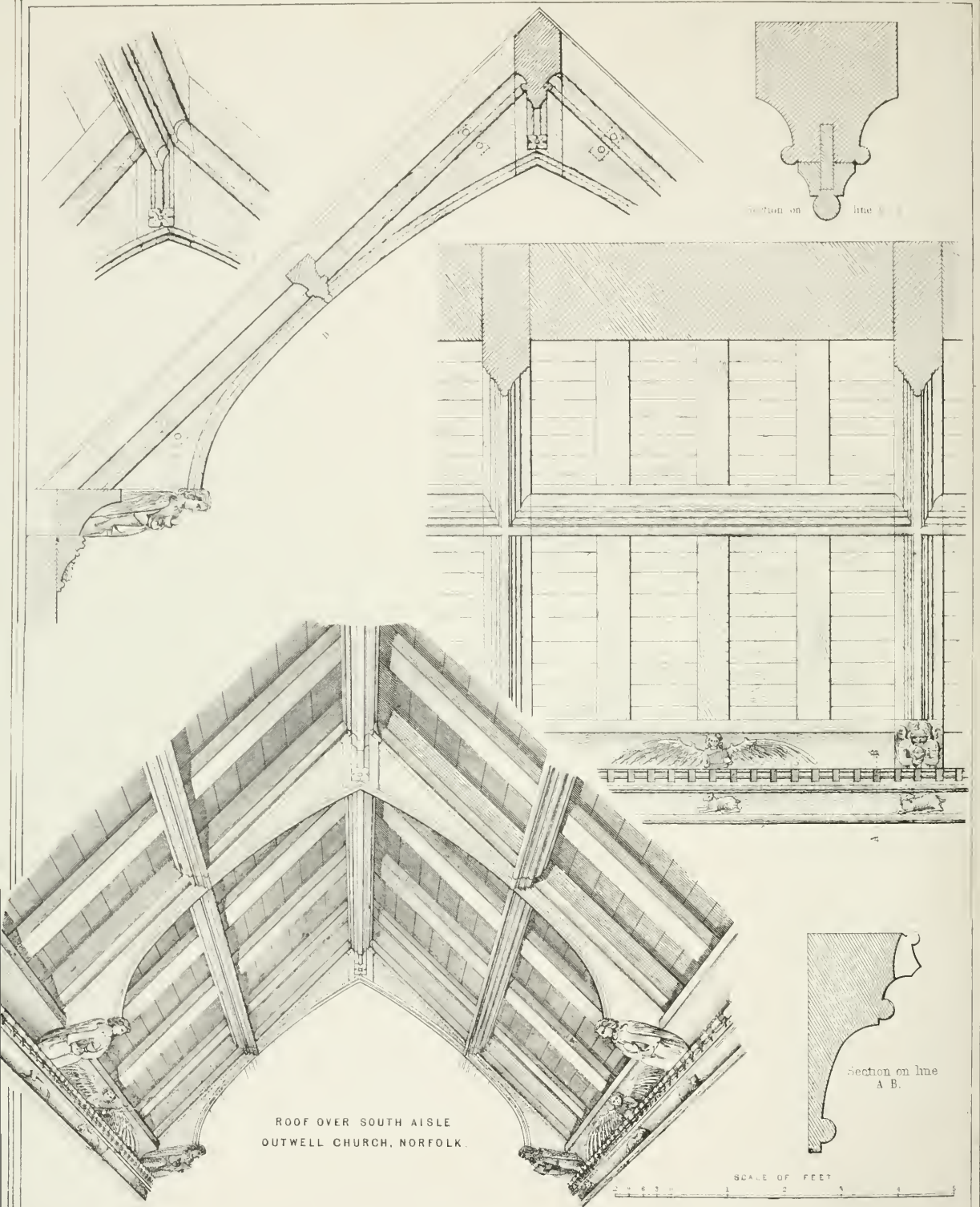


PLATE XXIII.

ROOF OVER SOUTH AISLE OF OUTWELL CHURCH, NORFOLK.

THIS variety of a hammer-beam roof is not often to be met with ; indeed, the principle of the hammer-beam is quite lost sight of, and it should more properly be considered as simply an arched braced roof : the effect endeavoured to be produced is undoubtedly that of the roof being upheld by a host of angels. It is, however, not very satisfactory ; and though experience shows that such a roof is abundantly strong, yet there is an apparent want of support about it, which should be guarded against.

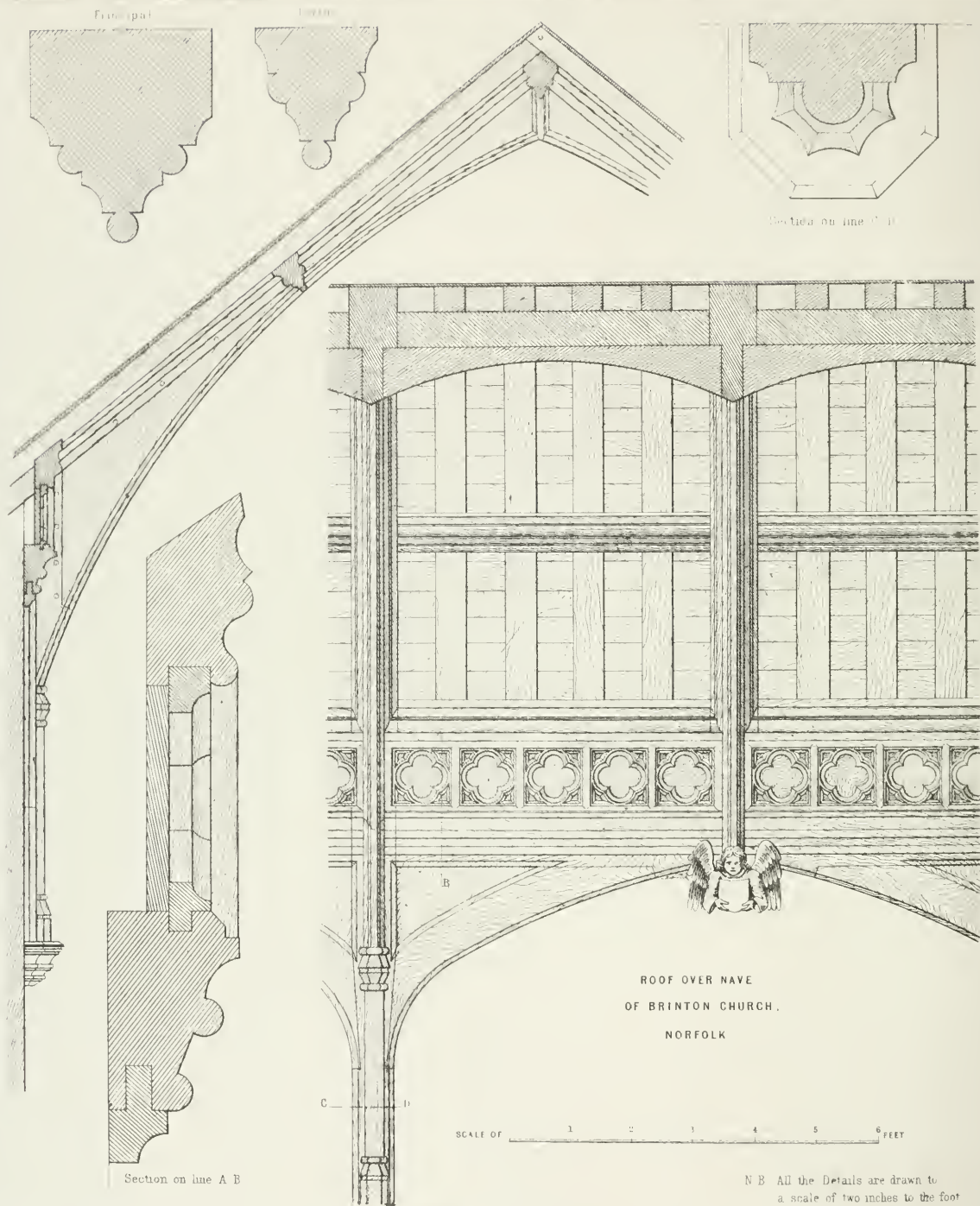
Over the north transept of this Church is a very elaborate hammer-beam roof, retaining almost all its original colouring ; one peculiar feature in it is that the collar-braces are tenoned into the collar and hammer-beams only, without being connected with the principal rafters ; there being no struts over the hammer-beams, a triangular space is left between the braces and the principal rafter, which is filled in with open-worked tracery.

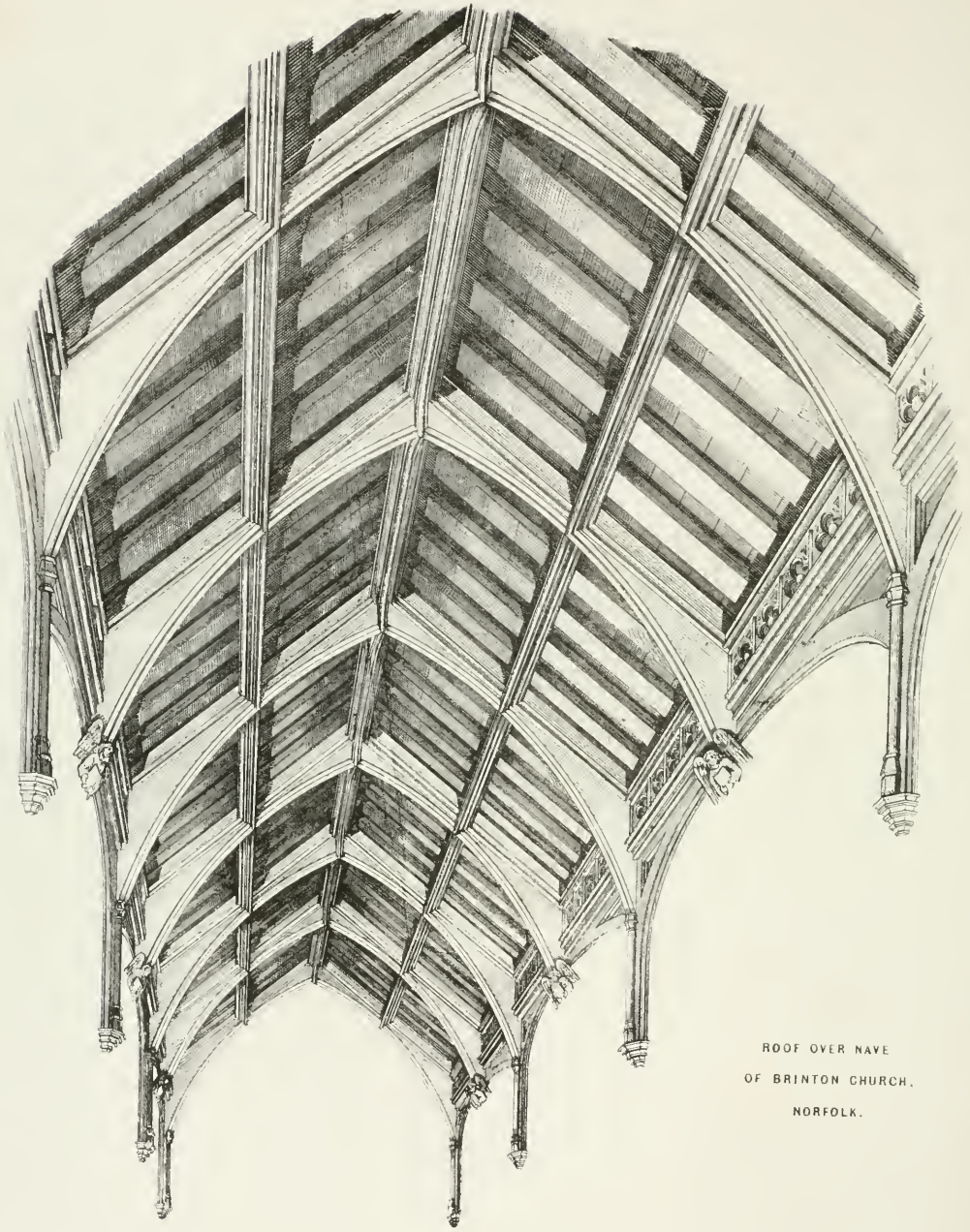
The angle formed at the ridge of the south aisle roof is of 92° , and the same construction is introduced in the intermediate trusses of the nave roof. (See Sketch, page 13.)

					ft. in.
Span of Roof	.	.	.	.	17 6

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Principal Rafters	1	2	by 10
Common Rafters		8	by 6
Purlin		10	by 7
Hammer-beam		10	by 10
Space between Trusses	6	6	





ROOF OVER NAVE
OF BRINTON CHURCH,
NORFOLK.

PLATES XXIV. AND XXV.

ROOF OVER NAVE OF BRINTON CHURCH, NORFOLK.

If it were not for the somewhat abrupt termination of the main arched braces against the wall-pieces, there would be no fault to find with the effect of this roof. The reason of their being executed so was evidently that they might follow the same curve as the intermediate trusses, which are supported close under the cornice by good figures of angels bearing shields. The cornice has a very good effect: in this instance the tracery is not open, a board being placed close behind it, but the parts that would have been pierced through are painted black against this board.

The principals, purlins, and upper member of the cornice are well moulded, and mitre together. In the longitudinal section (Plate 24) the mitre lines of the purlins have been accidentally omitted; the purlins themselves do not extend further than shown; but the mouldings should be shown mitred, they being worked out of the solid.

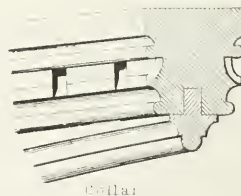
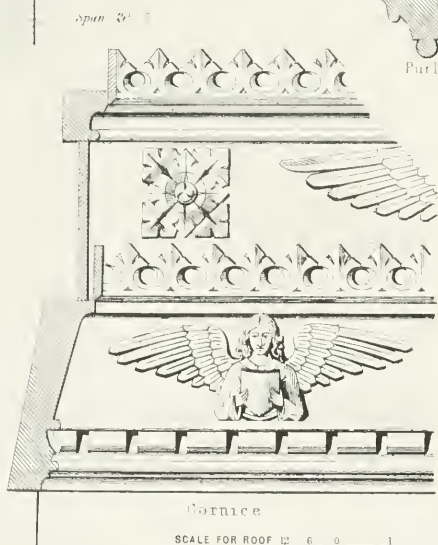
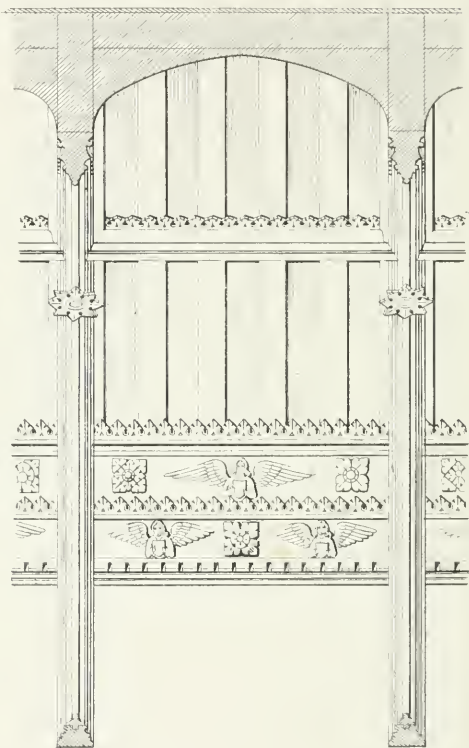
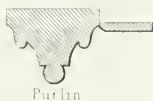
The angle formed by the rafters at the ridge is of 100° .

					ft.	in.
Span of Roof	.	.	.	.	17	0

SCANTLINGS OF TIMBERS.

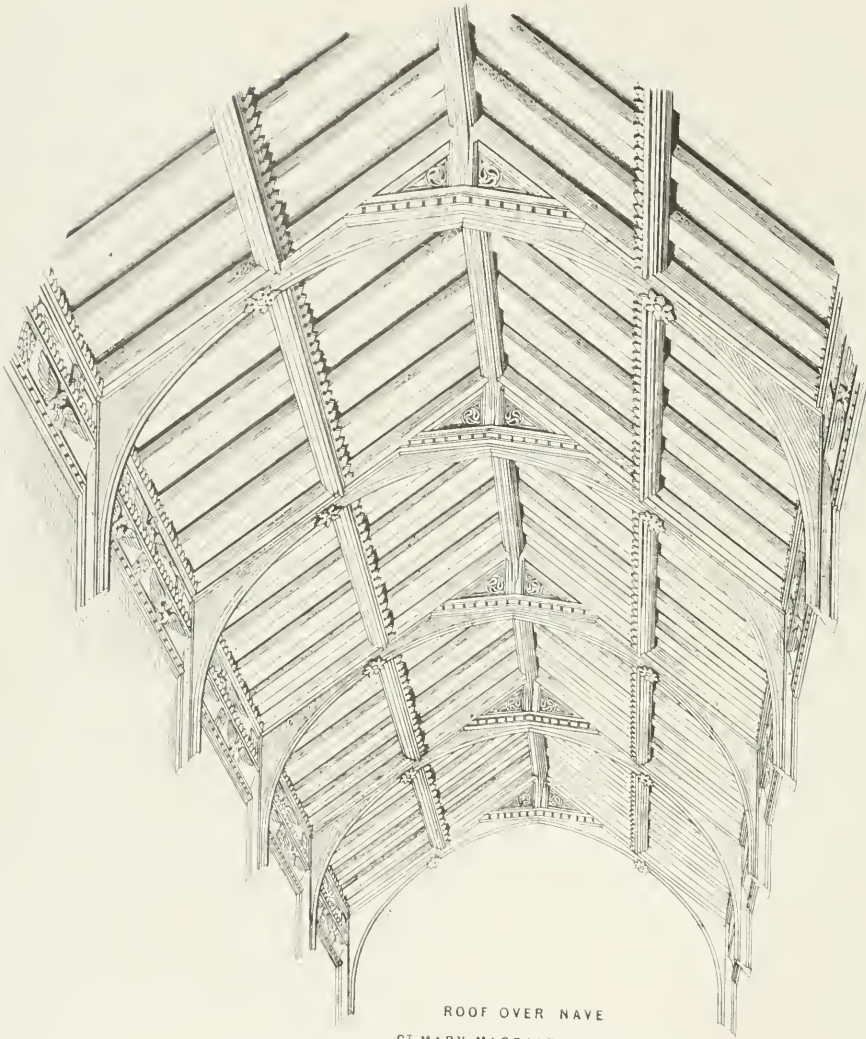
					ft.	in.	in.
Principal Rafters	.	.	.	.	10½	by	9
Common Rafters	.	.	.	.	6	by	4
Purlin	.	.	.	.	7	by	6
Ridge-piece	.	.	.	.	9	by	7
Space from centre to centre of Main Trusses	.	.	.	.	12		

ROOF OVER NAVE
ST MARY MAGDALEN CHURCH,
PULHAM, NORFOLK.



SCALE FOR ROOF 12 6 0 1 2 3 4 5 6 7 FEET

SCALE FOR DETAILS 12 9 6 3 0 1 2 FEET



ROOF OVER NAVE
ST MARY MAGDALEN CHURCH,
PULHAM, NORFOLK.

PLATES XXVI. AND XXVII.

ROOF OVER NAVE OF ST. MARY MAGDALEN'S CHURCH, PULHAM, NORFOLK.

THOUGH a very flat-pitched roof, the angle formed at the ridge being of 105° , this is one of the most pleasing of the series: it is of the description termed collar-braced, and for simplicity and gracefulness of design is not surpassed by any that we have met with of that class. The various timbers are all effectively moulded, and the purlins and cornice surmounted by a cresting of strawberry leaves; the lower member of the cornice is enriched with an embattled moulding, as is also the collar-beam—the spandrels above which are filled in with tracery.

All the mouldings and enrichments of this roof retain traces of having been polychronised, the eastern bay being more elaborately decorated than the rest of the roof, both as regards the carved work and the colouring.

	ft.	in.
Span of Roof	20	5

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Principal Rafters	12	by	10
Common Rafters	6	by	$3\frac{1}{2}$
Collar-beam	1 2	by	$8\frac{1}{2}$
Ridge-piece	8	by	8
Purlin	8	by	$6\frac{1}{2}$
Wall-piece	10	by	$8\frac{1}{2}$
Space from centre to centre of Trusses	6	2	
Depth of Cornice	3	2	

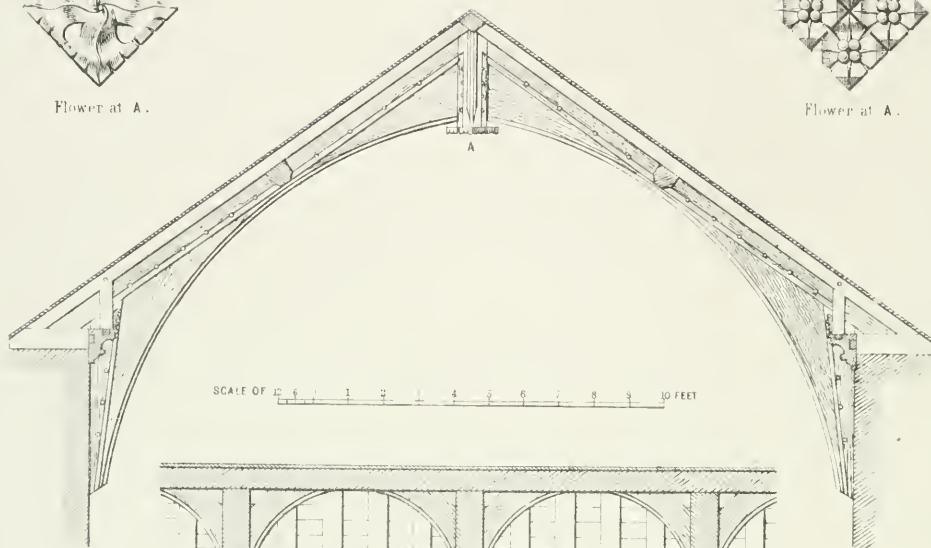
ROOF OVER NAVE, STARSTON CHURCH, NORFOLK.



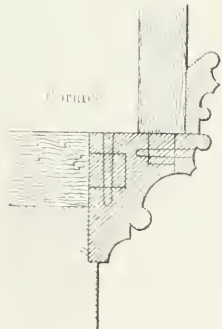
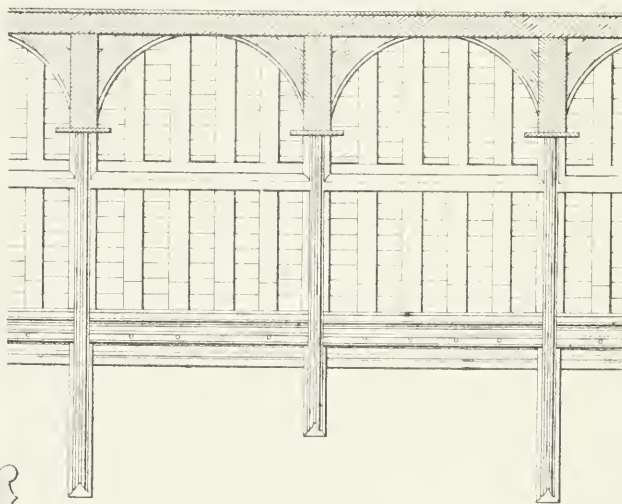
Flower at A.



Flower at A.



SCALE OF 12 6 1 2 4 5 6 7 8 9 10 FEET



Purlin



Common Rafter



Wall Piece



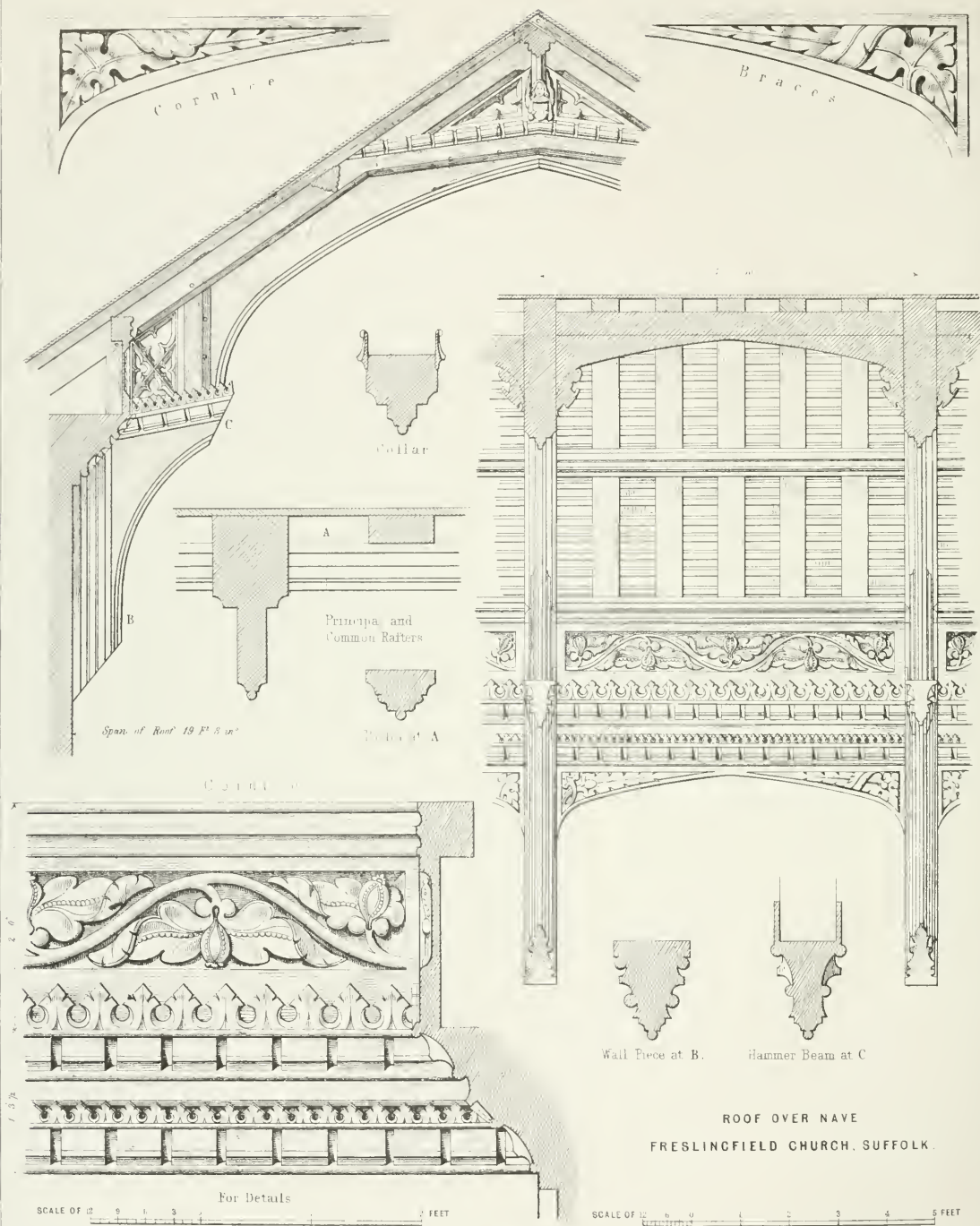
Principal Rafter

Scale for Details

12 6 1 2 3 4 5 6 7 8 9 10 FEET



ROOF OVER NAVE
STARSTON CHURCH NORFOLK



ROOF OVER NAVE
FRESLINGFIELD CHURCH, SUFFOLK.



ROOF OVER NAVE
FRESLINGFIELD CHURCH, SUFFOLK.

PLATES XXX. AND XXXI.

ROOF OVER NAVE OF FRESLINGFIELD CHURCH, SUFFOLK.

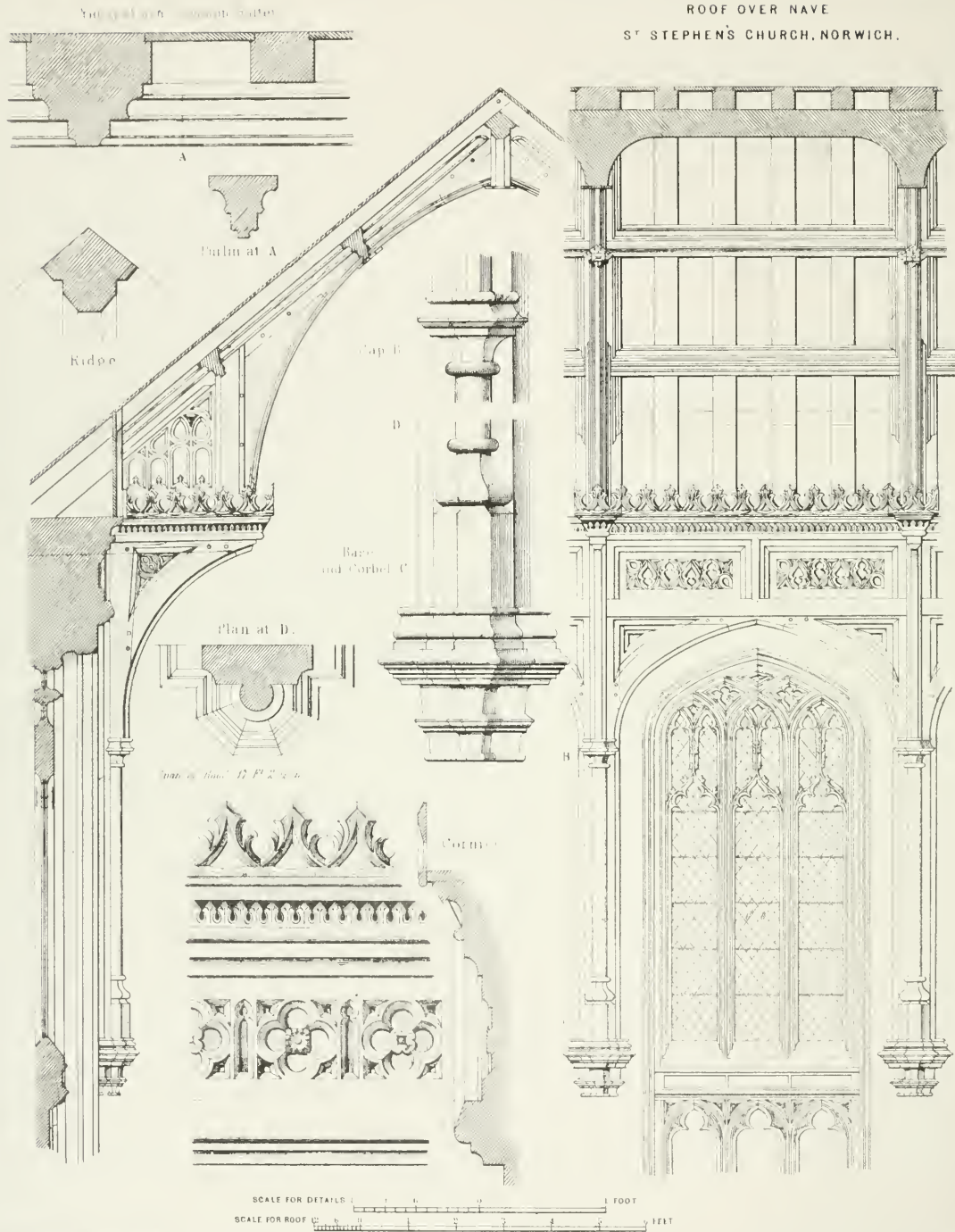
For a single hammer-beam roof this is of a very low pitch, the angle formed at the ridge being of 112° , yet the effect internally is altogether very good. The Church where this specimen occurs has been fully described and illustrated in the first series of our work on "Parish Churches," page 117: the main feature of this roof is its magnificent cornice, which is very much brought forward into the building, so as to gain greater height for it. The arched ridge-braces spring from small figures of angels bearing shields, and it is probable that the ends of the hammer-beams and wall-pieces have been similarly terminated, or intended to be so. The spandrels over the hammer and collar beams are filled in with tracery; the embattled moulding to the collar-beam is applied on and extends across the principal rafter; the spandrels of the cornice braces, as well as the upper member of the cornice, contain some well-executed foliage; and altogether this roof exhibits a high degree of finish.

						ft. in.
Span of Roof	.	.	.	.	.	19 8

SCANTLINGS OF TIMBERS.

						ft. in.	in.
Principal Rafters	.	.	.	.	.	10	by 8
Common Rafter	.	.	.	.	.	7	by 3
Hammer-beam	.	.	.	.	.	10	by 8
Collar-beam	.	.	.	.	.	1 2	by 8
Wall-piece	.	.	.	.	.	11	by 8
Purlin	.	.	.	.	.	7½	by 5½
Space from centre to centre of Truss	.	.	.	.	.	7	by 10
Depth of Cornice	.	.	.	.	.	3	by 3½

ROOF OVER NAVE
ST. STEPHEN'S CHURCH, NORWICH.





ROOF OVER NAVE
ST STEPHEN'S CHURCH, NORWICH

PLATES XXXII. AND XXXIII.

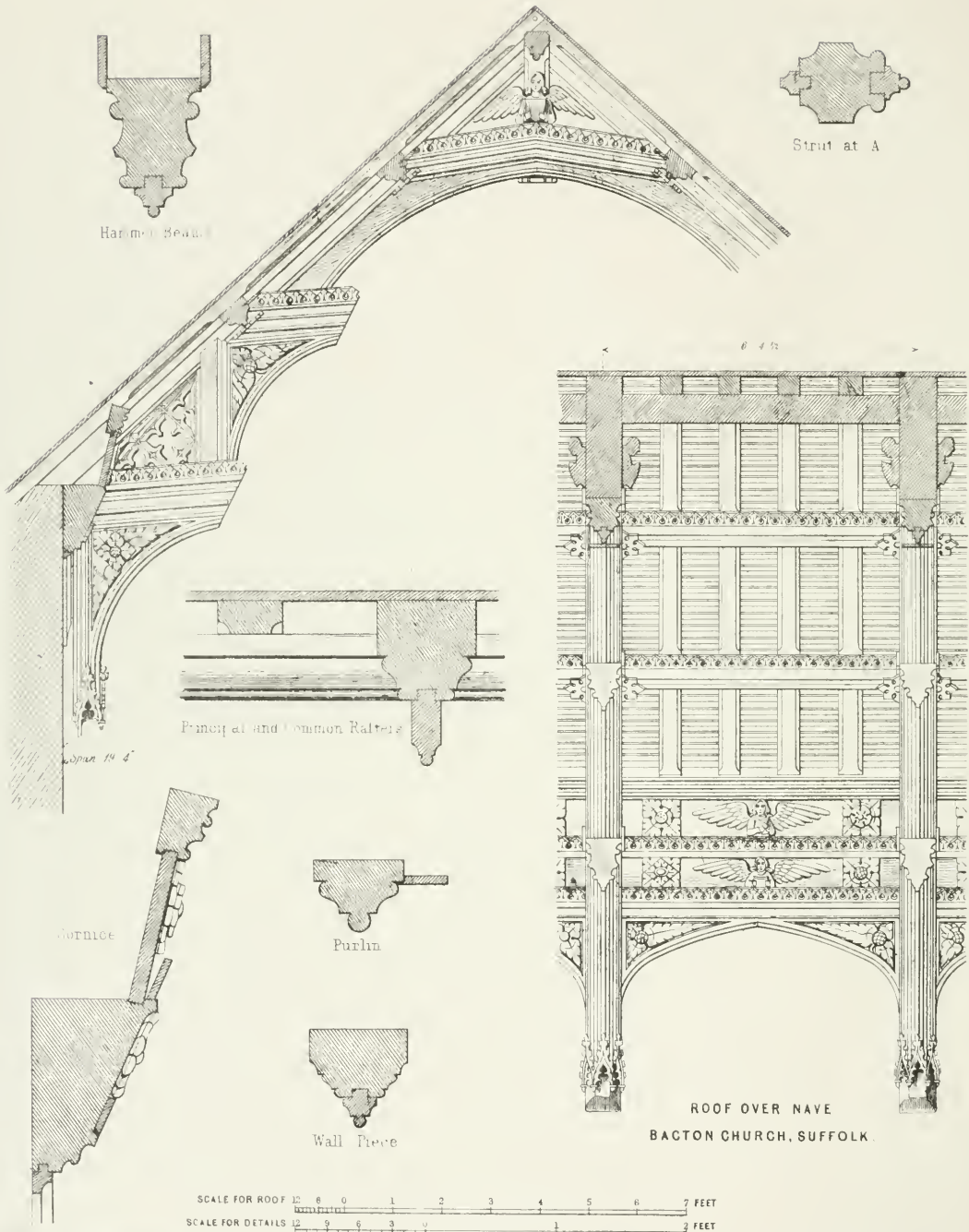
ROOF OVER NAVE OF ST. STEPHEN'S CHURCH, NORWICH.

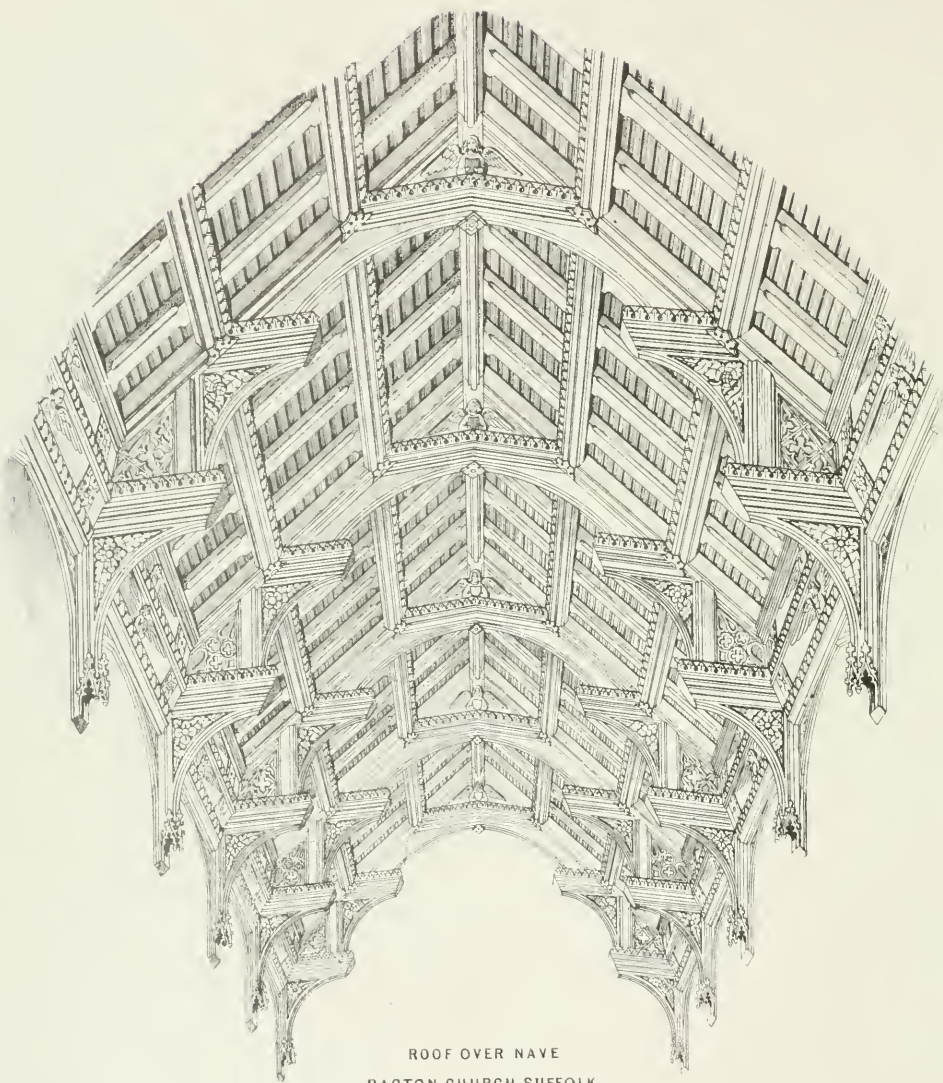
THIS magnificent roof covers both the Chancel and nave of St. Stephen's Church, there being no Chancel arch or other separation between them : the Chancel, however, is not a straight continuation of the nave, but inclines a little on one side, which is very apparent on looking up at the timbers of the roof from either end of the Church ; besides this, there is a slight difference in the corbels which support the wall pieces in the Chancel. There are sixteen bays in the whole length, and the effect produced by this long vista, with the succession of clearstory windows lighting up the various timbers, is beautiful in the extreme. The angle formed at the ridge is of 101° , and the effect of the roof would certainly not be improved by making the pitch steeper. Every portion of this roof is very carefully wrought, particularly the stone corbels on which the wall-pieces rest.

	ft.	in.
Span of Roof	17	$2\frac{1}{2}$

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Principal Rafters	12	by	11
Common Rafters	6	by	$4\frac{1}{2}$
Purlin	$6\frac{1}{2}$	by	6
Ridge-piece	7	by	7
Space from centre to centre of Trusses	6	8	
Depth of Cornice	2	$10\frac{1}{2}$	





ROOF OVER NAVE
BACTON CHURCH SUFFOLK.

PLATES XXXIV. AND XXXV.

ROOF OVER NAVE OF BACTON CHURCH, SUFFOLK.

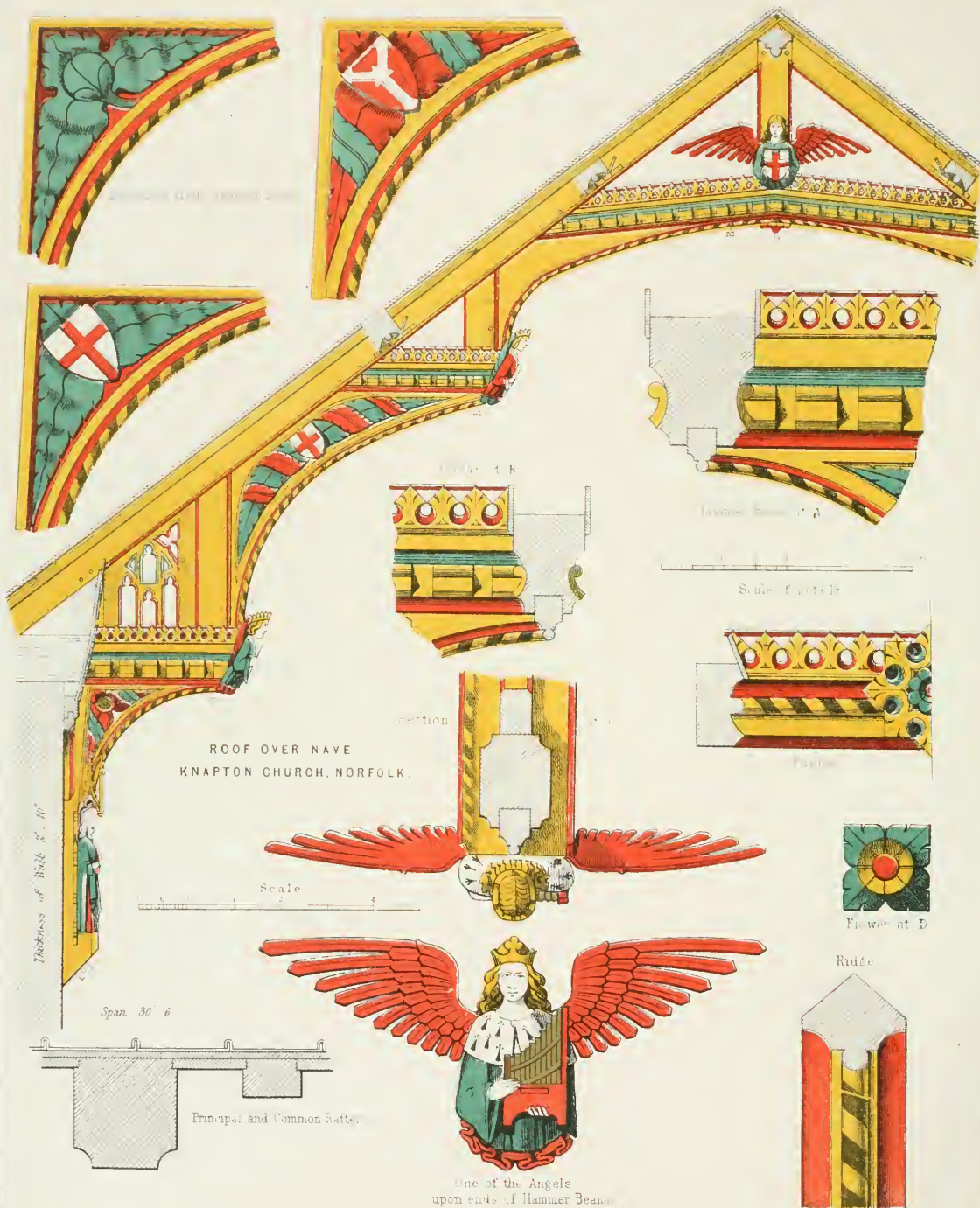
THIS is a very good example of a double hammer-beam roof, though unfortunately, owing to the ill treatment it has received, it is now in a very dilapidated state. The lower portions of the wall-pieces have all been cut off: these were probably finished (as at Woolpit,* in the same county, and Knapton, in Norfolk) with sculptured figures of saints; the ends of the hammer-beams were also in all probability terminated, as in the two before-mentioned examples, with figures of angels having extended wings. The cornice and hammer-beam braces have boldly carved solid spandrils; and almost all the horizontal moulded timbers are fringed with the strawberry-leaf ornament, which imparts a remarkably rich appearance to the whole roof. All the moulded and carved parts have once been enriched with colouring. The Church contains some rich examples of screen-work and open seats.

	ft.	in.
Span of Roof	19	4

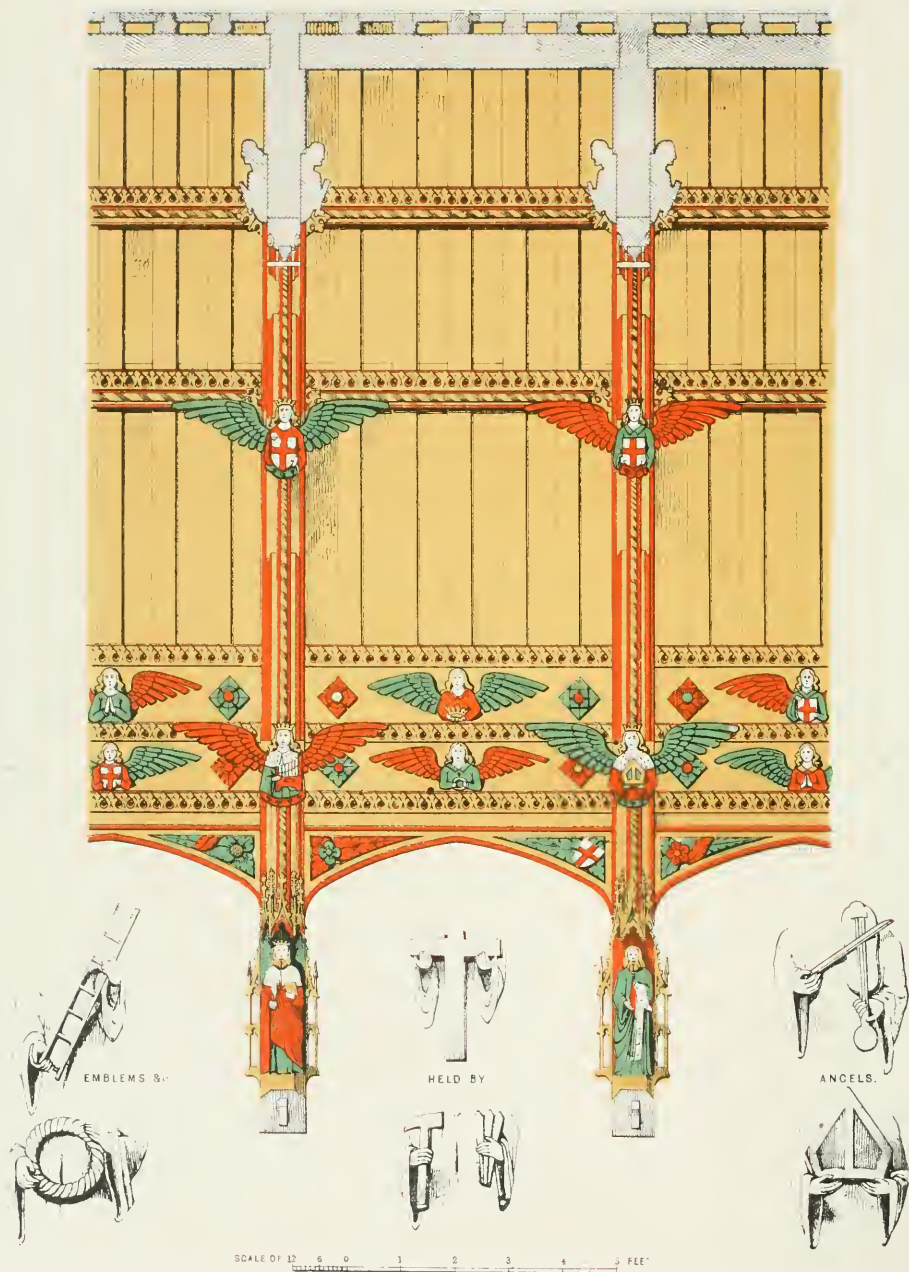
SCANTLINGS OF TIMBERS.

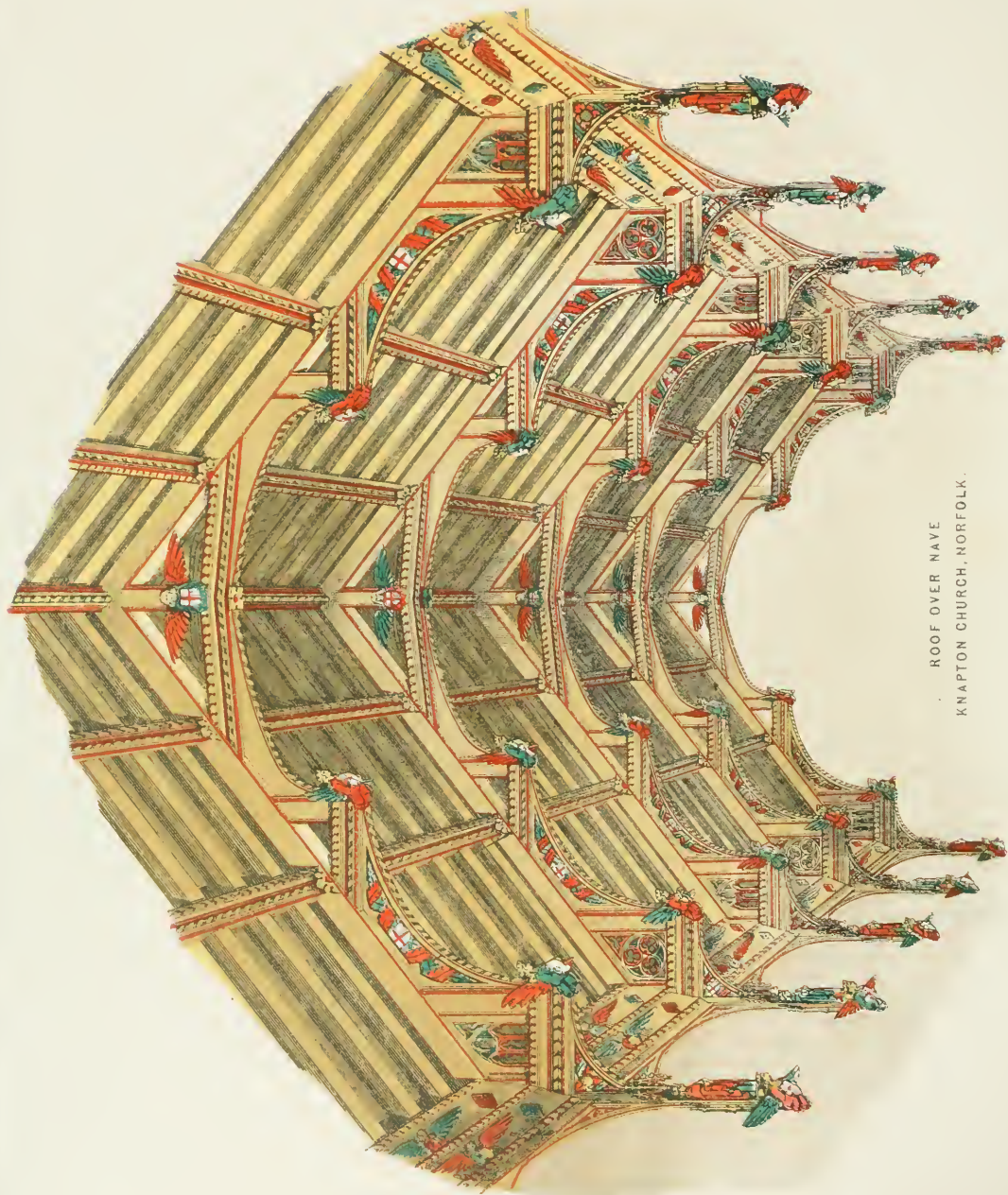
	ft.	in.	in.
Hammer-beams	10½	by	9
Principal Rafters	9½	by	9
Common Rafters	6	by	3
Purlin	8½	by	6½
Space from centre to centre of Trusses	6	4½	
Depth of Cornice	3	0	

* See Brandon's "Parish Churches."



ROOF OVER NAVE
OF KNAPTON CHURCH
NORFOLK.





ROOF OVER NAVE
KNAPTON CHURCH, NORFOLK.

PLATES XXXVI., XXXVII., AND XXXVIII.

ROOF OVER NAVE OF KNAPTON CHURCH, NORFOLK.

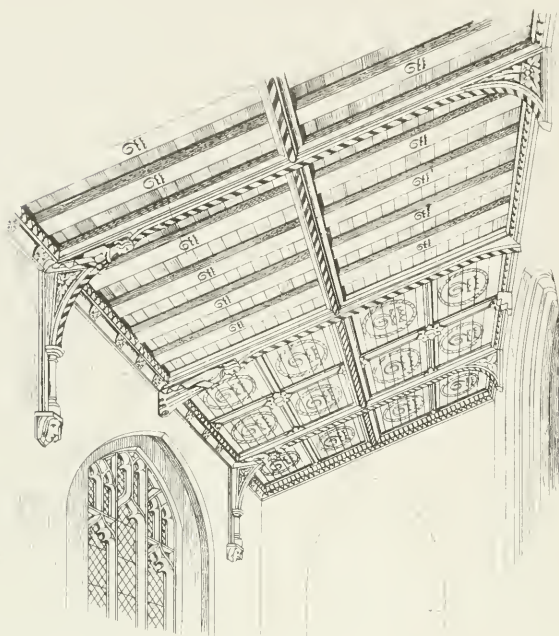
THIS is the most beautiful double hammer-beam roof that we have met with, and it becomes a particularly valuable specimen on account of its rich colouring, which it still retains almost perfect, as well as the greater part of its carved enrichments.

The span is the widest that we have illustrated; and yet, though of low pitch, the angle at the ridge being of 105° , there is no appearance of its having spread in the least. The Church consists simply of Chancel, nave, west tower, and south porch. Where the windows occur they are not made to harmonize with the roof, which altogether appears too magnificent for the rest of the structure. There is a tradition in the neighbourhood, that a vessel was wrecked on the coast close to Knapton, and that this roof was saved from the wreck: it is scarcely necessary to say that it is not likely that the timbers should have been found ready made to fit the walls of an existing Church; but the tradition is very probably not entirely without foundation, and doubtless we may look upon this splendid roof as a pious thank-offering for deliverance from the dangers of shipwreck.

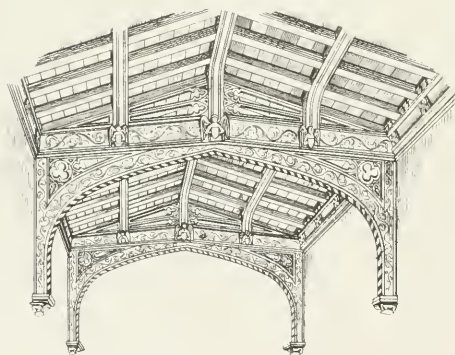
	ft. in.
Span of Roof	30 6

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Hammer-beam	12	by	10
Collar-beam	1 3	by	7
Principal Rafter	11	by	10
Common Rafter	6	by	$3\frac{1}{2}$
Purlin	8	by	5
Space from centre to centre of Truss	6		6
Depth of Cornice	3		8



ROOF OVER NORTH AISLE
OF MATTISHALL CHURCH.
NORFOLK.



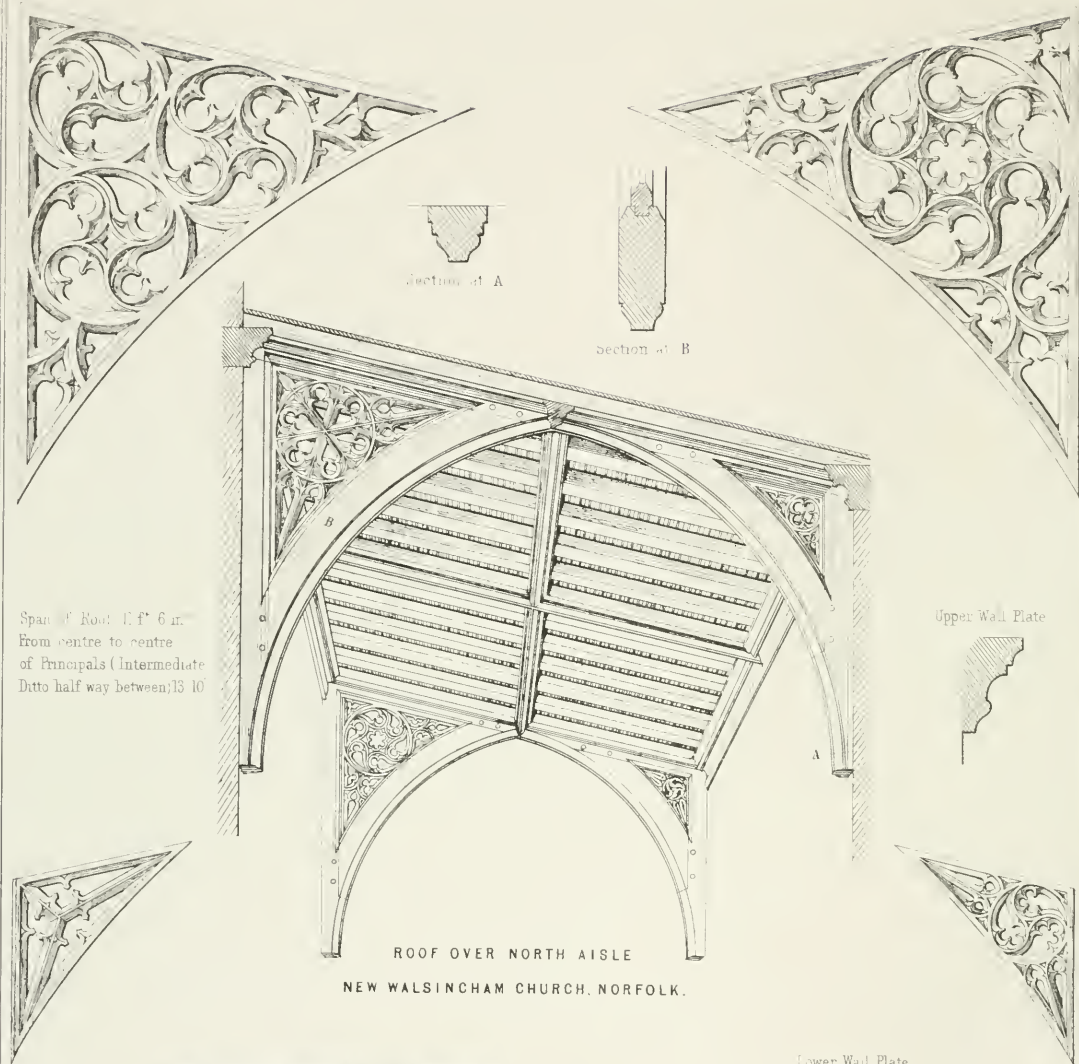
ROOF OVER NAVE
OF ALDENHAM CHURCH
HERTS

PLATE XXXIX.

ROOF OVER NORTH AISLE OF MATTISHALL CHURCH, NORFOLK.

FEW varieties are to be met with in aisle roofs compared with what occur over the naves of Churches. The present example exhibits scarcely any constructive feature beyond a plain lean-to roof, with the exception of the principal trusses having wall-pieces; the different timbers are well moulded, and the ends of the intermediate trusses, as well as the principals, are carved into small figures. This roof is decorated with colour, as is also the nave roof, and some exquisite specimens of screen work: the eastern portion is boarded and divided into panels by moulded ribs; in each panel is painted the letter T, surmounted with a crown and encircled by a wreath; the line of the longitudinal ribs is continued along the remaining portions of the roof that are not boarded by a letter T, also crowned, being painted on each rafter. The beads are treated, as is almost invariable in all coloured work, with a spiral band of black on a white ground. The same is shown in the roof over the nave of Aldenham Church,* Herts, the whole of which has been richly coloured.

* For a coloured illustration of this roof, see Blackburn's work on "Decorative Painting."



SCALE FOR FIRST TRUSS OF ROOF 12 6 0 1 2 3 4 5 6 7 FEET

SCALE FOR DETAILS 12 9 6 3 0 0 1 2 FEET

PLATE XL.

ROOF OVER THE NORTH AISLE OF NEW WALSINGHAM CHURCH, NORFOLK.

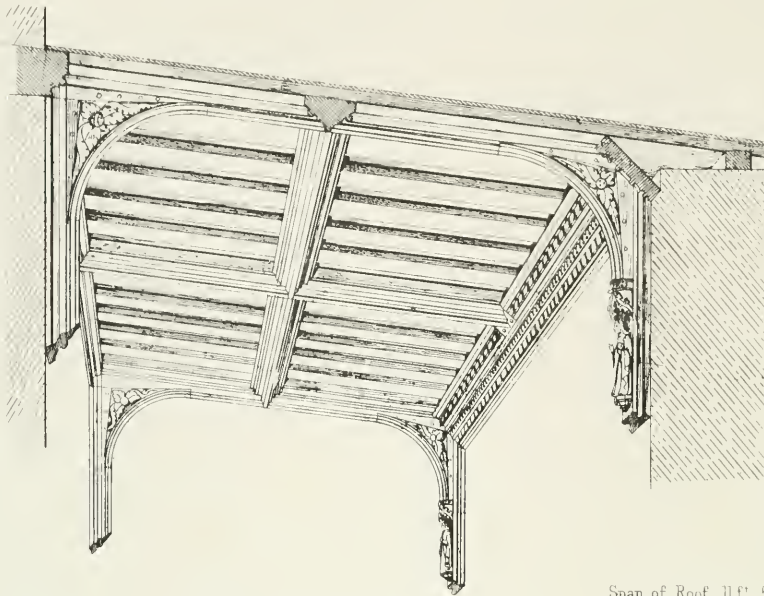
THE framing of this roof is much better than the preceding one ; the pitch is not so steep, and yet by the introduction of the arched braces a much more pleasing effect is produced. In these roofs the chief part of the weight is borne by the principal rafters ; the purlins, wall-pieces, and braces being tenoned into them, as indeed are in most cases the cornices : the spandrels are filled in with very well-executed open tracery of good design, and almost all of them of different pattern.

The roof over the south aisle is boarded, and the panels are further enriched with tracery and carved foliage ; but, as this specimen has already been illustrated by Pugin, we have not considered it worth repeating.

		ft. in.
Span of Roof	.	11 6

SCANTLINGS OF TIMBERS.

	ft. in.	in.
Principal Rafters	10	by 8
Common Rafters	6	by 3½
Purlin	6	by 6
Wall-piece	9	by 5
Space from centre to centre of Trusses	13	10



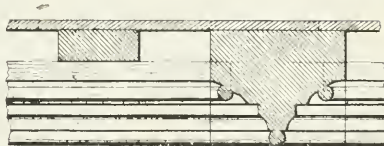
Rafters let in to upper
Wall Plate

ROOF OVER SOUTH AISLE
BRAMFORD CHURCH, SUFFOLK.

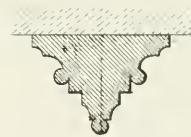
Span of Roof 11 f' 5 in.^s
From centre to centre
of Principals (Intermediate
Ditto half way between) 13 f' 9 in.^s



Purlin

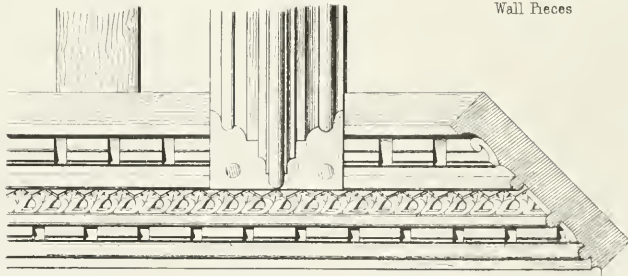
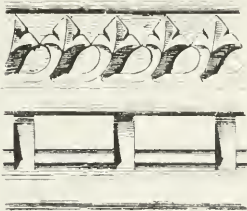


Principal and Common Rafters, showing junction with Purlin.



Wall Pieces

Portion of Cornice
Scale 2 in.^s to the foot



Cornice and foot of Intermediate Principal



PLATE XLI.

ROOF OVER SOUTH AISLE OF BRAMFORD CHURCH, SUFFOLK.

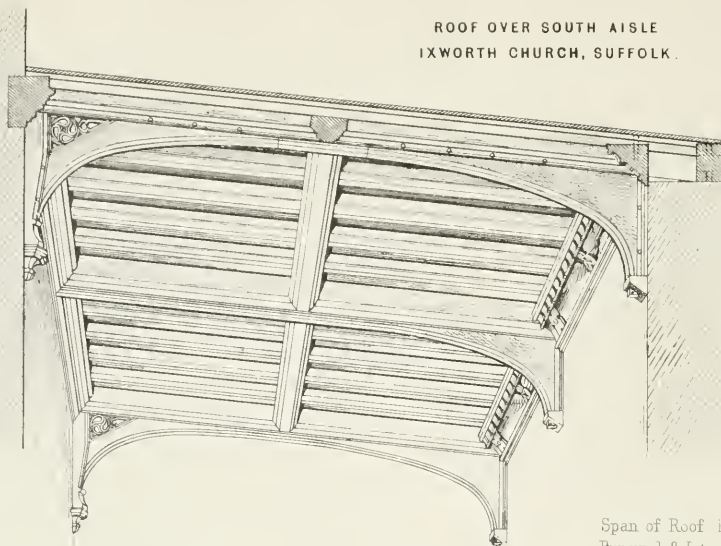
THIS roof, though almost flat, has still a very good effect, from its bold and well-moulded principals and purlins, which mitre together, and its deep and enriched cornice; it is seldom in aisle roofs that we meet with so important a cornice; in this case it is about eighteen inches deep, with two rows of battlements and one of a variety of the strawberry leaf ornament. The ends of the lower wall-pieces are well carved into figures, probably of saints, with small crocketed canopies over them, from which spring the curved braces, which have spandrels of solid carved foliage: the braces on the opposite side of the roof have similarly carved spandrels, but the wall-pieces are left quite plain. This Church has a good hammer-beam roof over the nave (illustrated in our work on Parish Churches), but it has been sadly mutilated; the hammer-beams are carved into figures of angels, the heads of which have been sawn off.

		ft. in.
Span of Roof		11 5

SCANTLINGS OF TIMBERS.

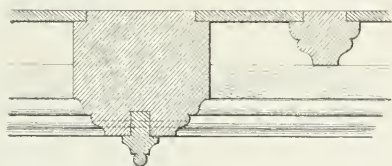
	ft.	in.	in.
Principal Rafters	11½	by	10
Common Rafters	7	by	3
Wall-piece	11½	by	8½
Purlin	11½	by	7
Space from centre to centre of Trusses	13		9

ROOF OVER SOUTH AISLE
IXWORTH CHURCH, SUFFOLK.



Span of Roof 11 ft 10 in.
Principal & Intermediate Trusses
4 ft 9 1/2 in. apart.

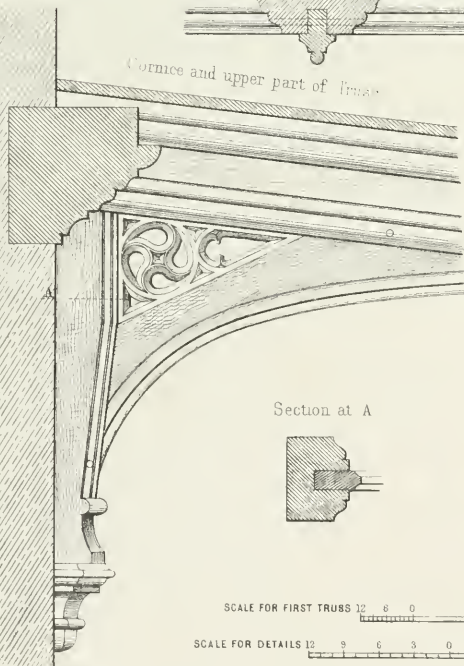
Principal and Common Rafters



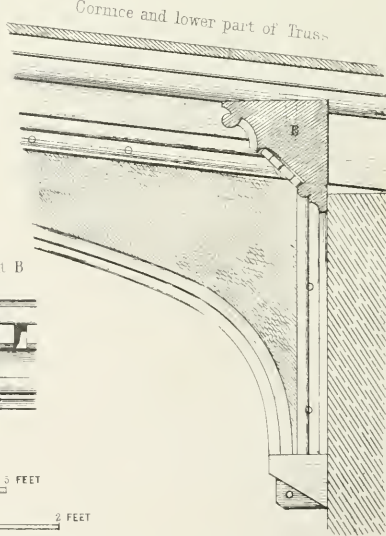
Purlin



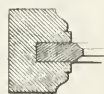
Cornice and upper part of Truss



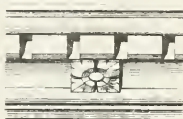
Cornice and lower part of Truss



Section at A



Front of Cornice at B



SCALE FOR FIRST TRUSSES 12 6 0 1 2 3 4 5 FEET

SCALE FOR DETAILS 12 9 6 3 0 1 2 FEET

PLATE XLII.

ROOF OVER SOUTH ISLE OF IXWORTH CHURCH, SUFFOLK.

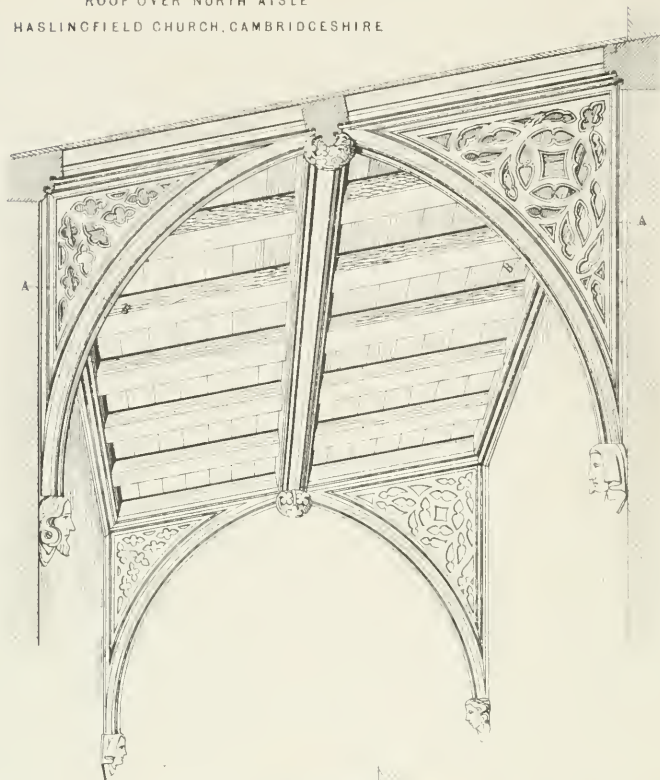
WHEN we visited the Church the roof of this aisle was taken off, and the timbers piled up in the yard; and as we could not ascertain whether or not it was to be replaced, we measured it in order to retain a record thereof. It had been wrought with extreme care, the common rafters even being all well moulded; the lower wall-pieces had probably been terminated with figures of angels with outspread wings, as the tenon and pin-hole for them still remained; the upper arched braces had small spandrels, with well-executed open-worked tracery in them. The Chancel of this Church is covered with a very good hammer-beam roof, with intermediate trusses; the spandrels formed over the hammer and collar-beams are filled in with open-work tracery of very good design; the hammer-beams are moulded to correspond with the cornice, and are similarly ornamented. The Chancel is nearly twenty feet wide.

					ft.	in.
Span of Roof	.	.	.	.	11	10½

SCANTLING OF TIMBERS.

					ft.	in.	in.
Principal Rafters	.	.	.	.	12	by	10½
Common Rafters	.	.	.	.	6	by	4½
Purlin	.	.	.	.	8	by	6
Wall-piece	.	.	.	.	7½	by	5½
Space from centre to centre of principal Truss	.	.	.	.	9		7

ROOF OVER NORTH AISLE
HASLINGFIELD CHURCH, CAMBRIDGESHIRE



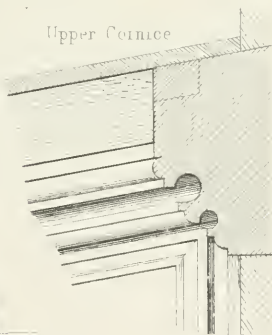
Span of Roof 11 1/2 ft
Trusses 13 2' apart

Walters 8 x 4

Principal and Currier



Upper Cornice



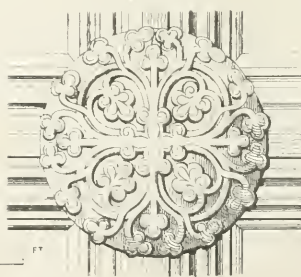
Section at A and B



Boss from Roof



Boss from Roof



SCALE FOR FIRST TRUSS OF ROOF



SCALE FOR DETAILS



1 FOOT

PLATE XLIII.

ROOF OVER NORTH AISLE OF HASLINGFIELD CHURCH, CAMBRIDGESHIRE.

THIS very interesting specimen we do not hesitate assigning to the Decorated period, of which we should consider it an early example, on account of the thickness of its curved braces and also for the extreme beauty of its mouldings. The Church where it occurs is very rich in the work of this period, several of the windows are of good design and contain remains of exquisite stained glass; the cross,* which terminates the east gable of the nave, is also a fine example of Decorated work.

The construction of this roof is very similar to that over the north aisle of New Walsingham Church, Norfolk (Plate 40), the principal difference being in the thickness of the curved braces, and the absence of any intermediate principal rafters.

The bosses which cover the intersections of the timbers are very boldly and effectively cut, and the character of the foliage is very early.

	ft.	in.
Span of Roof	11	0½

SCANTLINGS OF TIMBERS.

	ft.	in.	in.
Principal Rafters	11	by	10½
Common Rafters	8	by	4
Curved Braces	7½	by	6¾
Purlin	11	by	10
Space from centre to centre of Trusses	14	0	

* See "Analysis of Gothick Architecture," Section I. Decorated, plate 33.

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